WELCOME TO LCC

At Lansing Community College, we're committed to excellence in education. Since our beginnings in 1957, we've grown from a small technical college to one of the largest, most comprehensive community colleges in the nation. We offer classes year-round on our 28-acre campus in the heart of Michigan's capital. You can choose from more than 150 degree and certificate programs and nearly 2,500 courses, or complete the first two years of a liberal arts education. In addition to our main campus, we operate the Aviation Center at Capital City Airport in Lansing, and the Truck Driver Training Center near Battle Creek. And to make classes accessible to more people in more areas, we have Learning Centers in over 20 communities within our 30-mile service area. LCC is accredited by the North Central Association of Colleges and Schools, and serves nearly 40,000 people annually. Our 38th commencement is just one symbol of our commitment to providing lifelong education for all.
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Please keep this catalog as a reference to the learning opportunities available at Lansing Community College. Education is a lifelong process, and LCC continues to be a resource for its students throughout the nation and the world. Futures not only begin at LCC, they are enriched, over and over, throughout a lifetime.

This catalog was produced by the Marketing and Communications, Publications and Advertising Office, Lansing Community College.
MISSION STATEMENT

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

BOARD OF TRUSTEES

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Chair

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Vice Chair

Ronald A. Nichols, M.D.
Secretary

(Vacant at time of printing.)
Treasurer

Olga A. Holden, Ph.D.
Trustee

Dorothy D. Jones
Trustee

Sharon A. Reid
Trustee
MESSAGE
FROM THE PRESIDENT

Dear Students,

Welcome to Lansing Community College! We are pleased that you chose us to assist you in the pursuit of your goals and dreams. Our job is to help you reach those goals and make your dreams a reality.

Please let us know how we can help. We take our cues from you. If you have a question, need advising or counseling, or have a complaint, let us know. Whether you’re looking for extra assistance, a mentor, or even a new perspective, we are here to help you put words to your hopes, action to your plans, and greater opportunity in your future.

We are proud to provide outstanding educational service to the Lansing area, and are pleased you decided to put us to the test. Our excellent faculty and staff work hard to create an environment that will serve you well, today and in the future. Please take full advantage of all we have to offer. If there is anything I can do personally to improve your learning experience, please contact me at the Executive Office at 517 483-1851.

Cordially,

Abel B. Sykes, Jr.
President
Lansing Community College
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www.lcc.edu
ACADEMIC CALENDAR

Fall Semester 1996

Classes Begin: August 22
Labor Day: September 2
Thanksgiving: November 26
Last Day of Classes: December 15

Spring Semester 1997

Classes Begin: January 11
Martin Luther King, Jr. Day: January 20
Spring Break: March 3–9
Graduation Day: May 10

Summer Session 1997

Classes Begin: June 6
Independence Day: July 4
Last Day of Classes: August 1

Registration information and dates are published in the Class Schedule for each semester, or students may call the Office of the Registrar.
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 Programs explained later in this section. Admission to the College does not guarantee admission to a particular program.

GENERAL ADMISSION PROCEDURES

Procedures for Completing the Admissions Application

1. Complete all items requested on the application for admission.
2. Attach the non-refundable $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. Guest students must follow the procedures outlined under Guest and International Guest Applicants.

APPLICANTS MAY MAIL, FAX (517) 483-9688, OR BRING APPLICATIONS TO THE ADMISSIONS OFFICE LOCATED IN THE GANNON VOCATIONAL-TECHNICAL CENTER IN ROOM 232. ITEMS SHOULD BE MAILED TO: 1111 ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210. FOR ADDITIONAL INFORMATION CALL (517) 483-1200.

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

BASIC SKILLS ASSESSMENT AND ADVISING FOR STUDENT SUCCESS

General Information

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

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

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

Where to Find Information About Basic Skill Levels

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

Where and When to Take the Tests

Basic skills assessment is available for new students during the S.T.A.R.T. (Student Testing and Advising Registration Times) Program, which takes place at the beginning and/or end of each semester. For more information about S.T.A.R.T., call (517) 483-5323.

Most returning students take the reading and/or writing test prior to registering for courses with basic skill prerequisites. Testing is available at the Learning Center, Room 309, Arts and Sciences Building, Monday through Saturday, whenever the Center is open. Call (517) 483-1594 for hours.

What the Tests Are Like

The tests are on computers and are not timed. They are adaptive, which means that the computer selects each question based on whether the student answered the previous question correctly, branching up or down, getting more difficult or easier. The computer draws from a large pool of questions, but students only have to answer 20. Most students allow two hours to complete the reading and writing assessment.

The Retest Policy

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

Math Assessment

Many courses have math prerequisites and/or basic skill levels. If a student is interested in enrolling for such a course, he or she must establish a math level before he or she can register.

For up-to-date information about math assessment, students should refer to the current Class Schedule or see a faculty advisor in Room 103, Arts and Sciences Building. For testing hours, call (517) 483-1594.

Academic Advising Services

Faculty advisors will explain LCC placement test scores, determine waiver eligibility, help students plan class schedules, and discuss curriculum choices at LCC. Students may already have been granted reading and/or writing level waivers based on past LCC classes, successful completion of specific classes, or degrees completed at LCC or other colleges that have been transferred into LCC.

In addition, students may be eligible for a waiver if they achieved specific scores on national achievement tests, such as the ACT or SAT. Students should bring copies of test results or transcripts from other colleges to review with a faculty advisor in the Counseling and Advising Center (Room 103, Arts and Science Building). If they have not already requested a transfer credit evaluation through the LCC Registrar's Office.

Advisors can also provide students with other college information or make referrals to other college personnel when appropriate. Students are encouraged to visit the on-campus Counseling and Advising Center (Room 103, Arts and Science Building) where no appointments are necessary, or to attend one of the special off-campus Learning Center advising sessions. The phone number for the Counseling and Advising Center is (517) 483-1594.
SPECIAL PROGRAM/SPECIAL CIRCUMSTANCE ADMISSION

Selective Admission Programs

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

- Airframe Maintenance Technology, Associate in Applied Science
- Aviation Flight Technology, Associate in Applied Science
- Aviation, Associate in Applied Science
- Court and Conference Reporting, Associate in Business
- Dental Assistant, Certificate of Achievement
- Dental Hygienist Program, Associate in Applied Science
- Diagnostic Medical Sonography, Certificate of Achievement
- Fire Academy, Certificate of Completion
- Medical Assistant, Certificate of Achievement
- McMichigan Police Academy, Certificate of Completion
- Music Commercial Performance, Associate in Applied Arts
- Music Transfer, Associate in Applied Arts
- Nursing, LPN Option, Certificate of Achievement
- Nursing, RN Option, Associate in Applied Science
- Paramedic, Certificate of Achievement
- Powerplant Maintenance Technology, Associate in Applied Science
- Radiation Therapy, Associate in Applied Science
- Respiratory Therapist, Associate in Applied Science
- Surgical Technology, Certificate of Achievement
- Truck Driver Training, Certificate of Completion

International Applicants

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

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

General admission to the College for all types of visas requires applicants to:
1. Be at least 18 years old.
2. Prove successful completion of studies equivalent to U.S. high school (secondary) school.
3. Provide proof of competency in the English language (not required for admission to English language instruction), and
4. Provide additional documents as required by the applicant's USINS visa classification.

International students who wish to copy 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 mailing delays,to obtain visas and exit permits, and to make travel arrangements. All admission materials from applicants outside the United States must be received by the College no later than eight weeks prior to the first day of registration for the semester of attendance.

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

Admission procedures are established and reviewed by the International Student Services Committee. Any changes in the procedures will be brought to the attention of the Dean of Student and Academic Support, students, applicants, LCC staff, and the service community. The International Student Services Committee has been established in the Division of Student and Academic Support with the following membership:
1. Director or Assistant Director of Entry Services (Chairperson)
2. Director of International Programs
3. Bilingual Coordinator
4. International Student Counselor
5. A member of the teaching faculty
6. International Admissions Specialist

Dual Enrollment Program

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

Qualifications for the Dual Enrollment Program

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

Application Procedures for the Dual Enrollment Program

Applicants must:
1. Complete a College application.
2. Submit written approval from their authorized high school official each semester of attendance.
3. Submit an official high school transcript each academic year.
4. Mail or bring the application, non-refundable $10 application fee, letter of authorization, and transcript to the LCC Admissions Office prior to enrolling in classes.

Special Admission Program

Qualifications for the Special Admission Program

Applicants must:
1. Be working toward high school graduation requirements.
2. Have attained freshman or sophomore high school standing prior to applying for the program.

Application Procedures for the Special Admission Program

Applicants must:
1. Complete a Special Admission Supplemental Application for each class in which the student intends to enroll.
2. Submit an official high school transcript each semester of attendance.
3. Mail or bring the Special Admission Supplemental Application(s), the non-refundable $10 application fee, and transcript to the LCC Admissions Office prior to enrolling in classes.

Guest and International Guest Applicants

Guest and international guest applicants must:
1. Obtain a guest application from the Registrar’s Office of the student’s 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 non-refundable $10 application fee to the Admissions Office prior to enrolling in classes.
APPEAL PROCESS FOR DENIAL OF COLLEGE ADMISSION

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

STEP 1: Admissions 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 or Assistant Director of Entry Services within two working days of the denial.

STEP 2: Director or Assistant Director of Entry Services

(An admission was originally denied by the Director or the Assistant Director of Entry Services, the applicant may move directly to Step 3 of the appeal process.) The applicant must submit his or her appeal in writing to the Director or Assistant Director of Entry Services at least one working day prior to the appeal meeting. The Director or Assistant Director shall render a decision to the 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 or Assistant Director shall discuss Step 3 of the appeal process with the applicant. If the applicant wishes to appeal the denial, the Director or Assistant Director shall assist the applicant in contacting the Appeals Coordinator.

STEP 3: The Board of Appeals

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

- A. The 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 non-voting member)

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

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

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

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

The decision of the Admissions Board of Appeals is final and will be reached by simple majority vote. A copy of the Board of Appeals decision shall be 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.

FINANCIAL AID INFORMATION

The Student Financial Aid Veteran Services Program at Lansing Community College assists students who demonstrate need, in meeting some of the college costs that cannot be met by personal or family resources. An objective method of need determination approved by the federal government is used. Some scholarships are available that are based on academic achievement or talent. Students are eligible to apply for financial assistance if they have graduated from high school, have completed a GED, or have demonstrated, through testing, the ability to benefit from courses or programs at Lansing Community College. They must enroll in LCC programs of study leading to a one-year certificate, two-year degree, or four-year transfer program, and must be a U.S. citizen or eligible non-citizen. Enrollment in a program of study abroad is approved for credit by Lansing Community College is considered to be enrollment at Lansing Community College for purposes of a student applying for federal student financial assistance.

SOURCES OF FINANCIAL ASSISTANCE

Financial assistance programs are funded from federal, state, college, and private sources. Four major sources are scholarships, grants, loans, and employment. Most students receive a combination of these forms known as a financial aid package.

Scholarships

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

- Board of Trustees: Scholarships are awarded to outstanding district high school graduates.
- Divisional Scholarships: Scholarships are awarded to outstanding students who are residents of the district and who apply directly to the College division or department in which the student wishes to study. Students may contact the Student Financial Aid Veteran Services Office for information.
- Athletic Scholarships: Scholarships are awarded through the Athletic Department. Talented athletes should contact coaches in their respective sport areas.
- Michigan Competitive Scholarships: Scholarships are awarded upon a qualifying examination given during the junior and senior years in high school. Students may receive up to $500 per year, or $1,000 per academic year, for up to four years.
- Private Scholarships: Available through the College or private organizations. A Scholarship and Financial Aid Booklet is available in the Office of Student Financial Aid Veteran Services giving information about private scholarships, grants, loans, employment, and college transfer scholarships available to LCC students.
- Foundation Scholarships: Provided through the Lansing Community College Foundation Office.

Grants

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

- Federal Pell Grants: Based on need. Students must file the FAFSA Financial Aid Veteran Services Form and a Free Application for Federal Student Aid. The Office of Student Financial Aid Veteran Services must receive the results of this application to award the grant.
- Federal Supplemental Educational Opportunity Grants: Awards are awarded to students who submit the same application forms as for Pell Grants.
- Michigan Educational Opportunity Grants: Awards are awarded to eligible students who have been Michigan residents for at least 12 consecutive months.
- Michigan Adult Part-time Grants: Awards are awarded to eligible students who have been Michigan residents for at least 12 months.
- Michigan Tuition Incentive Program: Awards to 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 Pell Grants.
- Michigan General Education Development (GED) Certificate.
Loans

Money that must be repaid beginning six months after graduation or enrollment of less than six (6) credits, with the exception of the PLUS loans which must begin repayment upon disbursement.

- William D. Ford Federal Direct Student Loan Program includes both Subsidized and Unsubsidized Student Loans and the Parent Loan for Undergraduate Students (PLUS). Specific guidelines pertaining to eligibility and the application process are available in the Student Financial Aid Veteran Services Office.

1. Subsidized and Unsubsidized William D. Ford Direct Student Loans are available for students who meet eligibility requirements. Students applying must submit a Free Application for Federal Student Aid (FAFSA), an LCC Admissions Application, an LCC Financial Aid Application, and an LCC application for William D. Ford Direct Subsidized and Unsubsidized Student Loans.

2. Parent Loans for Undergraduate Students (PLUS) are available to parents of undergraduate dependent students to pay college costs not covered by other financial aid. Applications for William D. Ford Direct PLUS loans are available in the Student Financial Aid Veteran Services Office.

- MI LGANs is a Middle Income Loan provided by the State of Michigan. This is a credit-based loan.

- Short-Term Loans are available from Lansing Community College on a limited basis through the Student Financial Aid Veteran Services Office.

Employment

Job opportunities may be available to assist students in earning money to meet part of their educational expenses. Employment at the College is based upon skills and abilities and not necessarily upon need.

- Federal College Work Study is based upon need. Students must submit an LCC Admissions Application, the Financial Aid Application Form, and a Free Application for Federal Student Aid to be considered.

- Michigan Work Study is awarded to needy students to help meet expenses while attending college. Students may be employed by the College, public or private non-profit organizations, private business, and industry.

- Career and Employment Development 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 Development Services Office and must interview at the department's or employer's office.

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

Special Situation Funds

Funds are available for certain students. The College's Student Financial Aid Veteran Services Office has information regarding the availability of funds and application procedures for the following programs:

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

HOW AND WHEN TO APPLY

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

1. The completed FAFSA form may be submitted electronically through the Federal Student Aid website located in the Student Personnel Services Building. Processing takes four to 10 working days after the student enters the application. Call (517) 483-1259 to schedule an appointment. Staff is available to assist students with filling the application. The Electronic Student Aid Report (ESAR) 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.

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

To make application for financial assistance at the College, additional forms must be submitted:

1. New students must complete the LCC Application for Admission and the Federal Student Aid Application form and return them to: 1120 STUDENT FINANCIAL AID VETERAN SERVICES, LANSING COMMUNITY COLLEGE, 430 N. CAPITOL, PO BOX 40310, LANSING, MI 48907-7210. New students must complete the Free Application for Federal Student Aid (FAFSA) and submit it to the federal processor.

2. Returning students must complete the LCC Financial Assistance Form and submit it to the Office of Student Financial Aid Veteran Services, and must complete the Free Application for Federal Student Aid (FAFSA) and submit it to the federal processor.

William D. Ford Federal Direct Student Loans (Subsidized, Unsubsidized, and PLUS) are available by completing the 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 district high schools' counseling offices. Scholarship forms are also available at the LCC Admissions Office and the Student Financial Aid Veteran Services Office.

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

The LCC Foundation has scholarships available through the Student Financial Aid Veteran Services Office, or students may call the LCC Foundation Office at (517) 483-1985.

Processing of the student's application for financial assistance will be completed and the student will be notified when the student has submitted the LCC Application for Admission to the Admissions Office and the LCC Financial Assistance Application to the Office of Student Financial Aid Veteran Services, and when the Office of Student Financial Aid Veteran Services receives the results of the federal application for student financial assistance. Students transferring from other colleges must submit a Federal Aid Transcript from their previous colleges when they apply for financial assistance, along with any additional documents required by the Office of Student Financial Aid Veteran Services.

The amount of the student's award will be based on a standardized cost of attending LCC, less the expected family 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 ASSISTANCE

As a recipient of financial assistance, 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 ASSISTANCE PACKAGE

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

EXPECTED FAMILY CONTRIBUTION

If a student is a dependent student, the College assumes that parents have the first obligation to provide for the student's cost of education to the extent that they are able, based on a standardized method of determining parental contribution. The second obligation falls upon the student to contribute to his or her own education from personal assets and earnings, which may include the need to borrow against future earnings.

If a student is a self-supporting or independent student, the College assumes that since a student is the prime beneficiary of education, the student has a primary obligation to provide for the cost of education to the extent the student is able, based on a standardized method of determining student contribution. The student's expected contribution will come from personal earnings, spouse's earnings, if applicable, savings and assets, which may also include the need to borrow against future earnings.

SELECTION CRITERIA

Students are selected to receive need-based financial aid on a first-come-first-served basis. Students with the highest need are selected first until available funds are exhausted. Students with bachelor's degrees may receive Federal Work Study 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.

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

CREDIT HOUR LOAD

Fall and Spring Semester

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

Summer Session

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

SHORT COURSE ELIGIBILITY

Payment for courses that are less than a semester in length is permitted. Students enrolling in these courses must prove attendance. 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. Tuition and fees will be deducted from the financial aid during registration if sufficient funds are available and if tuition and fees are not paid by the student or other sources;
2. The student will receive an advanced financial assistance check during the first full week of classes if the student is eligible; and
3. The student will receive the balance of grants, loans, or scholarships approximately 21 days after the first day of the semester.

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

FINANCIAL ASSISTANCE ADVANCE CHECK

Check Distribution

Checks are issued twice each semester at the Cashier's Office if financial aid awards exceed the amount of tuition and fee charges. Students use this money for books, supplies, transportation, and room and board. Advance checks are printed during the first two weeks of the semester. Final checks are printed by the 21st day of the semester. Students who receive an advance check normally receive a final check.

Advance Checks

Advance checks are automatically calculated for financial aid students if their awards are complete and if they are registered by the last day of on-campus registration. The financial assistance advance check will be calculated by subtracting the amount of tuition and fees owed for the semester from the adjusted amount based on credit enrollment and writing a check for a portion of the remainder.

College Work Study

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

TUITION REFUNDS

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

a. To outstanding balances on FFEL Program Loans
b. To outstanding balances on Federal Direct Loans
c. To outstanding balances on Federal Perkins Loans
d. To Federal Pell Grant Awards
e. To Federal SEOG awards
f. To state financial aid awards
g. To institutional financial aid awards
h. To private or public donor awards
i. To the student

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

REPAYMENT OF GRANTS

If a student withdraws from Lansing Community College or is withdrawn by the College because of non-attendance, 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 REQUIREMENTS

To continue on financial assistance, students must maintain satisfactory academic progress each semester. Satisfactory academic progress for students receiving federal financial assistance is defined as follows:

1. Students must maintain a grade point average (GPA) of 2.0 or above on a semester and cumulative basis.
2. Students must earn 70 percent or more of the credits attempted on a semester and cumulative basis.
3. Students receiving financial aid at Lansing Community College for the first time and who do not make satisfactory academic progress will receive an academic warning letter.
4. After five semesters of enrollment, students are required to have a cumulative grade point average (GPA) of 2.0 or above and have earned a minimum of 70 percent of credits attempted. If a student is suspended because of unsatisfactory progress, with more than one semester but less than five semesters of enrollment, the student may be readmitted and allowed to re-enroll under an educational contract with Project STAY. A student will be considered as making satisfactory academic progress for financial assistance programs as long as the student adheres to the terms of the educational agreement, or until the student has raised his or her cumulative grade point average to a 2.0 or greater and has a cumulative completion ratio of at least 70 percent of all credits attempted.

Students who do not successfully complete the semester of their educational contract with Project STAY will be canceled from financial assistance.

After five semesters, students with GPAs lower than 2.0, or students who have earned less than 70 percent of credits attempted, will have their aid eligibility canceled. When they have improved their academic standing, they may be reconsidered for financial aid.

Students applying for the William D. Ford Federal Direct Student Loans must have completed at least one semester of prerequisites or core courses with a 2.0 GPA at 70 percent completion prior to submitting their application for a loan. During the student's loan period, the student must earn a minimum of six credits and maintain a 2.0 minimum grade point average each semester. In addition, the student must maintain a cumulative grade point average of at least 2.0 and earn at least 70 percent of all credits attempted.

APPEALS

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

RIGHTS TO INFORMATION

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

RENEWAL OF FINANCIAL ASSISTANCE

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

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

A student will not be awarded federal financial assistance at Lansing Community College beyond attempting 95 credits. A transfer student will not be awarded federal financial assistance beyond 95 attempted credits, including transfer credits accepted by LCC.

STUDENT FINANCIAL SERVICES COMMITTEE

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

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

The functions of this committee are:

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

VETERANS INFORMATION

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

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

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

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

After enrollment, veterans should direct their inquiries concerning eligibility to the Office of Student Financial Aid/Veterans Services in the Student and Academic Support Division.

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

In addition, the College participates in the Army College Fund, Air Force ROTC Program, Army ROTC Program, and U.S.M.C. Open Admissions Program.

Satisfactory Progress for Veterans' Benefits Eligibility

In compliance with Veterans Administration statutory requirements of subparagraph 56, section 1775 of chapter 36, Title 38 U.S. Code, Lansing Community College student veterans' benefits recipients will not be certified as eligible for benefits when their academic progress (cumulative grade point average) places them in the academic warning range (probation) beyond two semesters of enrollment. Re-certification of eligibility for benefits will not be considered until after the semester in which the student regains academic good standing (see Academic Standing Scale).
Certification Policy for Veterans Administration
Educational Benefit Recipients

Lansing Community College will notify the U.S. Department of Veterans Affairs if a student receiving veterans' educational benefits is awarded a grade of 0.0, "W" or "Z" for course work pursued. In this event, the College will report the first day of the certified attendance period as the last date of attendance, unless the benefit recipient provides to the Lansing Community College Veterans Office a written and signed statement indicating a different last date of attendance. Veterans' educational benefit recipients neglecting to request an official evaluation for credits earned at colleges other than Lansing Community College and for active duty military service will not have their enrollment certified beyond their second semester of attendance.

REGISTRATION INFORMATION

REGISTRATION PROCEDURES

Each semester Lansing Community College publishes the Class Schedule, which identifies courses offered for that semester. This booklet includes general information on the dates, times, and location of registration. Students may register for classes according to instructions which are published in the booklet. Some courses require basic skills proficiency levels which must be met prior to enrollment. Students are strongly encouraged to arrange for orientation, testing, and advising prior to registration.

SEMESTER CLASS SCHEDULES

Lansing Community College offers a highly diversified program of evening, Saturday, and Sunday courses on campus and at off-campus learning centers for those who choose to attend class outside of regular daytime class sessions. Lansing Community College offers packaged courses which are scheduled in eight-week segments.

TUITION AND FEES

Residency

I. Eligibility for Paying Resident Tuition

A. A student must be an American citizen, refugee, immigrant, or permanent resident and meet one of the following qualifications before being eligible to pay resident tuition.
   1. The following applies to students under 18 years of age:
      a. The student's parents or legal guardians have resided within the LCC district for at least six months immediately prior to the first day of the semester.
      b. The student is married and has resided within the LCC district at least six months immediately prior to the first day of the semester.
      c. The student is unmarried and is recognized as "manipulated" (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.

II. Proof of Residency

All students must provide proof of residency at the time of registration (Michigan House Bill No. 4166, 1985). Lansing Community College reserves the right to make the final decision on residency eligibility. 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 receipt.
C. Rental or lease agreement.
D. Utility bills with the student's name and address for each of the six months prior to the last 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. Non Resident Students — Students who provide proof of residency within the State of Michigan, but outside the LCC district for the six months immediately prior to the first day of the semester of enrollment are charged non-resident tuition.
C. Out of State — Students who provide proof of residency in a state other than Michigan for the six months immediately prior to the first day of the semester of enrollment are charged out-of-state tuition.
D. International Students — Students who have been admitted to the United States in a temporary, non-resident status are charged international tuition.

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

IV. Residency Status for Military Personnel and Dependents

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

VI. Non-Resident Owners of In-District Property

Non-resident 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 themselves or themselves or their guardian. The taxes paid must be in support of the current academic year and the credit cannot exceed the difference between the resident and non-resident tuition rates for the current academic year. To claim this credit, the student must provide the Office of the Registrar with the paid property tax receipt.
Payment of Tuition and Fees*

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

TUITION PER CREDIT HOUR*
Resident Students ........................................... $ 43.00
Non-Resident Students .................................... 1.75
Out-of-State Students ....................................... $101.00
International Students ................................... $101.00

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

FEES FOR ALL STUDENTS*
Application Fee (new students and guest students, not refundable) ............... $10.00
Registration Fee (all students, each semester, not refundable) ................... $23.00
Activities Fee (each semester) ................................................................... $ 1.50
7-11 credit hours ...................................................... $ 4.50
12 or more credit hours .............................................. $ 7.50

A fee will be charged for dishonored check or credit card transactions.
Course fees vary and are published in the Class Schedule booklet each semester.
*TUITION AND FEES ARE SUBJECT TO CHANGE THROUGH THE ACTION OF THE BOARD OF TRUSTEES.

Refund Policy for Semester-Length Courses

Fall and Spring Semesters and Summer Session
Withdrawal during first week of semester ..................................... 100% of tuition and fees
Withdrawal during second week of semester .............................. 50% of tuition only
Withdrawal after second week of semester .................................. No refund

Students receiving financial aid will receive refunds only if repayment to financial aid sources is not required.
Refunds are not retroactive to previous semesters. Questions relating to refunds should be addressed to the Cash Operation Office.

VARIABLE DATE COURSES

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

UP TO AND INCLUDING THREE-DAY COURSES
100% Refund ........................................... Prior to Start of Course
Drop with no course shown ........................................ No refund

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 Class
Drop with no course shown ........................................ No refund

Students with a valid reason for exception to this policy may fax, mail, or present their support documentation to the Office of the Registrar or the department offering the course.
Change credit/audit status ................................ Through midpoint of course (using calendar date—beginning through ending dates of course)

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

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

STUDENT CREDIT REQUIREMENTS

Student credit requirements are as follows:

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

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

CANCELED CLASSES

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

SCHEDULE CHANGES

During the schedule change period specified in the Class Schedule, a student may make changes in his or her schedule. A student may withdraw from a course before the end of the sixth week of the semester without academic penalty. Drops will not be processed after the last day of the semester.
Schedule changes involve the following procedures which must be completely carried out by the student so that the student's records in the Office of the Registrar may be accurately maintained:
1. Pick up a Drop/Add Form during the registration process or at the Office of the Registrar.
2. Fill out the form completely with information requested.
3. Return the form to the registration assistant or to the Office of the Registrar for proper recording. Do not leave until processing of the form has been completed and a copy has been received.

Departmental signatures and grade at time of drop are required on all drop forms after the sixth week of the semester.

REPEAT COURSES

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

AUDITING

A student who desires to attend a class regularly but does not wish to take formal examinations or receive an achievement grade and credit, may register as an auditor. All students have the option of changing from 'credit' to 'auditor' or from 'auditor' to 'credit' through the end of the sixth week of the semester. Students electing to change from auditor to credit are responsible for having course work up to date at the time the change is made and must have instructor approval after the first week of the semester. In addition, students should be aware that exercising this option may have an impact on their financial assistance or on student uni-
Withdrawal

I. Student-Initiated Withdrawal
A. If a student finds it necessary to withdraw from the College, he or she should contact the Office of the Registrar immediately and complete a drop-add form.
B. If the withdrawal takes place within the established refund period for each semester, a student withdrawing will receive a refund.
C. If a student withdraws from a semester-length class prior to the end of the sixth week of the semester, a final grade is not issued and the withdrawn class is not recorded on the academic record. A copy of the student-initiated drop-add form is maintained in the Office of the Registrar.
D. If a student withdraws from a semester-length class after the end of the sixth week of the semester, a grade is issued by the instructor at the time of the withdrawal. A grade will be placed on the final grade report and recorded on the academic record.

II. Administrative Withdrawal

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

An administrative withdrawal may be initiated by a classroom instructor in accordance with written procedures established by each department and with the recommendation of the respective departmental chairperson. An administrative withdrawal may be based on the following: (1) student non-attendance; (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 for administrative withdrawal. At this time, the instructor may recommend that the student withdraw from the particular course. If the student chooses not to withdraw, the instructor may initiate an administrative withdrawal through the Office of the Registrar.
C. When a student behaves in a manner that interferes with the instructional process, the classroom instructor consults with the student regarding the potential for administrative withdrawal and establishes guidelines for restoring 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 will not receive a grade, and a record of attempting the class will appear on the academic record. A copy of the administrative withdrawal form is maintained in the Office of the Registrar. A student who is withdrawn from a semester-length class after the end of the sixth week of the semester will be given a grade at the time of withdrawal.

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 regulations and an emergency exists, the student should be encouraged to seek help from an appropriate health or counseling office or agency, on or off campus. Assistance from the Office of the Dean of Student and Academic Support and/or College counselors should be sought if needed.
D. If there appears to be a violation of the law or a College regulation, the Office of the Dean of Student and Academic Support (or designee) shall contact the counseling staff, and a member of the counseling staff will meet with the student and recommend:
   1. Continued counseling if the problem is within the ability of the Counseling Department to handle.
   2. Referral back to the Office of the Dean of Student and Academic Support when no health-related problem is evident or when it is determined that the Counseling Department can do 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 professional stating that the student is able to function effectively with the stresses and demands of a College setting. The student may appeal the withdrawal decision to the Board of Appeals.
   4. Whenever possible, the counseling staff, working with the student's physician and/or relatives, shall make a recommendation to the student as to his or her future course of action.

Academic Information

Academic Definitions

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

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

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

Certificate of Completion: The certificate of completion consists of fewer than 30 specifically designated semester credits in occupational areas. It is earned with a minimum of a 2.0 cumulative GPA and is not recorded on the official academic record.

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 60 instructional minutes.

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

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

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

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

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

GRADING SYSTEM

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

<table>
<thead>
<tr>
<th>COLLEGE</th>
<th>NARRATIVE</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARD</td>
<td>EQUIVALENT</td>
<td>ACHIEVEMENT</td>
</tr>
<tr>
<td></td>
<td>GUIDELINE FOR</td>
<td>OF OBJECTIVES*</td>
</tr>
<tr>
<td>4.0</td>
<td>Excellent</td>
<td>91% to 100%</td>
</tr>
<tr>
<td>3.5</td>
<td>Good</td>
<td>88% to 90%</td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td>81% to 85%</td>
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<tr>
<td>2.5</td>
<td>Satisfactory</td>
<td>76% to 80%</td>
</tr>
<tr>
<td>2.0</td>
<td>Poor</td>
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<td></td>
<td>66% to 70%</td>
</tr>
<tr>
<td>1.0</td>
<td>Failure</td>
<td>60% to 65%</td>
</tr>
<tr>
<td>0.0</td>
<td></td>
<td>0% to 55%</td>
</tr>
</tbody>
</table>

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

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

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

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 course is received by the Office of the Registrar prior to the end of the sixth week of the semester, no grade will be recorded on the student’s academic record. For withdrawals after the sixth week of the semester, a final grade which is consistent with the course requirements will be assigned by the instructor.

COMPUTING GRADE POINT AVERAGE

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

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

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

CREDIT/NO-CREDIT GRADING (P-Z)

The credit (P)/no credit (Z) grading system has been established as a departmental option. This system is reserved for special course offerings where a credit/no credit grading system is most appropriate for the goals and objectives of the course.

1. Course prerequisites and other criteria for enrolling in courses offered on the P-Z grading system shall be determined by the department offering the course.

2. Courses using the P-Z grading system will be published as being graded on the P-Z grading system only, and the course syllabus shall be explicit regarding this fact.

3. Courses graded on the P-Z system may be counted toward an associate degree or certificate based on approval of the department heads. A maximum of 10 percent of the total credits required for a degree or certificate may be acquired on the P-Z system.

Grading procedure of the credit/no credit system is as follows:

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

2. The grades granted on the P-Z system are determined with definitions of P and Z as follows:
   a. P (credit) represents a level of performance equivalent to a regular number grade of 5.0 or above on a 4.0 system; credit is granted.
   b. Z (no credit) represents a level of performance less than a 2.0 on a 4.0 system; no credit is granted.

All courses attempted on the P-Z grading system will appear on the student's academic record.

GRADE REPORTS

An official academic grade report 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 time for an appeal for grade change petitions can be found in the College Catalog. The 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 POLICIES

Table for Determining Academic Standing

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

1. On your grade report or academic transcript, locate your cumulative grade point average (GPA) and the total number of credits completed.

2. Find your position in the left-hand column of the table according to your total number of credits.

3. Read across the page to the right until you locate the column which includes your current cumulative grade point average (GPA). This column heading indicates whether you are in the Good Standing Range, the Warning Range, or the Withdrawal Range.

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

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

**ACADEMIC STATUS**

<table>
<thead>
<tr>
<th>SEMESTERS COMPLETED</th>
<th>GOOD STANDING</th>
<th>WARNING RANGE</th>
<th>WITHDRAWAL RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CUMULATIVE GPA</td>
<td>CUMULATIVE GPA</td>
<td>CUMULATIVE GPA</td>
</tr>
<tr>
<td>1–7</td>
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<td>0.90 – 1.87</td>
<td>0.99 or less</td>
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<tr>
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<td>1.89</td>
<td>1.01 – 1.88</td>
<td>1.00</td>
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<td>2.00</td>
<td>1.97 – 1.99</td>
<td>1.96</td>
</tr>
</tbody>
</table>

**Satisfactory Progress**

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

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

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

**Unsatisfactory Progress**

Withdrawal Range: The academic progress of students is monitored each semester by the College using the Table for Determining Academic Standing. Students who fail to meet the academic standards of the College, that is, when their cumulative grade point average falls into the withdrawal range, may be academically dismissed for at least one semester before being considered for readmission. For further information, contact the Counseling Services Department at (517) 483-1184.

**STUDENT RECORDS**

**STUDENT TRANSCRIPTS**

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

Students may request a copy of their official transcript to be given or mailed to any party by submitting a request in writing to the Office of the Registrar. Transcript requests require two working days to process, and a $2.00 fee is charged for each transcript. A hold may be applied to the release of the transcript of any student or former student who has an indebtedness to the College.

**RECORDS POLICY**

Lansing Community College shall not distribute student lists to non-college agencies.

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

1. Students and/or a parent of a student if the student is a dependent, have the right to access, inspect, and review all educational records directly related to the student. Upon presentation of pictured identification and a written request from the student to the Office of the Registrar in Room 104 of the Student Personnel Services Building, access to all educational records shall be provided within a reasonable period of time (not to exceed 45 days from the date the request is submitted).

2. Educational records include all information maintained by the College which is directly related to the student with the exception of:
   a. Financial records of the student's parents.
   b. Confidential letters of recommendation prior to January 1, 1979.
   c. Confidential letters and recommendations associated with admissions, application for employment, or receipt of an honor or honorary recognition to which students have waived rights of inspection and review.
   d. Educational records containing information about more than one student. However, the College must permit access to that part of the record which pertains only to the inquiring student.
   e. Reports made by physicians, psychologists, or psychologists in connection with their treatment.
   f. Records of instructional, supervisory, administrative, and certain educational personnel which are in the sole possession of the originator.
   g. Records of the law enforcement unit of the College if compiled for law enforcement purposes.
   h. Records which relate exclusively to individuals in their capacity as College employees.

3. Directory information may be released at the discretion of College officials for any student who has not submitted a completed Request to Prevent Disclosure of Directory Information form to the Office of the Registrar by the end of the first week of the semester. The disclosure prevention form remains in effect until the student provides a written release to the Office of the Registrar. Directory information includes, but is not limited to:
   a. Name of student.
   b. Date 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


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 issued below:

a. Academic and administrative officials and staff of Lansing Community College whom the College has determined to have legitimate educational interest.
b. Other educational institutions in which the student is enrolled or intends to enroll.
c. Individuals and organizations who provide financial aid or scholarships to the student.
d. Authorized representatives of the Comptroller General of the United States, the Secretary of the Department of Health and Human Services, the Department of Veterans Administration, the Department of Education, and administrative heads of state and federal educational agencies authorized by law.
e. Accrediting organizations carrying out their accrediting functions.
f. Appropriate authorities in compliance with judicial orders and pursuant to a lawfully issued subpoena.

The student shall be notified of any such orders or subpoenas by the College.
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 or property crimes.

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

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

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

TRANSFER OF CREDITS

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

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 certified 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 applies to transcripts from non-accredited institutions may be found under the section entitled Non-Accredited Institutions.

Accredited and Non-Accredited Institutions

1. Freshman and sophomore level courses are accepted in transfer. Higher level credits are accepted if they correspond to a specific course at Lansing Community College. In most cases, an accepted course will be considered 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.

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

4. A student may request a change in 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 curricular department chairperson in conjunction with the evaluation specialist in the Admissions Office. Verification of the change can be made through the Office of the Registrar.

Non-Accredited Institutions

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

1. The Office of the Registrar will forward a transcript from a non-accredited institution to the department chairperson of the department in which the student has enrolled.

2. The department chairperson has the following 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 department chairperson will return the transcript to the Office of the Registrar and indicate in writing the credits granted and the course equivalency at Lansing Community College. The final transcript evaluation will have the signature of the appropriate divisional dean.

4. When two or more instructional departments are involved, the department chairperson of the department in which the student is enrolled will be responsible for consultation with the additional departmental chairpersons. When two or more departments are involved, the written reply to the Office of the Registrar will include the signatures of each respective departmental chairperson and the respective dean.
5. Credits from non-accredited institutions are evaluated by the departmental chairperson of the area in which the student enrolled. If the student changes his or her curriculum, he or she should notify the Office of the Registrar, because there may be a difference in the evaluation.

CREDIT FOR PREVIOUSLY ACQUIRED KNOWLEDGE AND LEARNING EXPERIENCE

Lansing Community College recognizes that learning outside of the classroom is valid. Therefore, it is the College's function to assess extra-institutional learning as part of its credentialing responsibility. 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. Students and Academic Support Building, (517) 483-1266.

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

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. Learning experiences must be directly related to the program (curriculum) or degree and must be pursued at Lansing Community College. These experiences must have been obtained from a non-academic source or not otherwise be available for academic credit through the transfer process outlined earlier. Prior to payment of the processing fee and submitting a portfolio of supporting documents, the student is requested to review with the academic department in which credit is being sought the possibility of credit being granted. Students must then submit the completed Experiential Learning Processing Form to the Office of the Registrar, including as much supporting documentation as possible. The student must also attach by his or her signature that the information submitted is true to the best of his or her knowledge. The processing fee must accompany submission of the form and portfolio.

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

Assessment Committee

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

In the evaluation process, the assessor will verify the accuracy and validity of the information stated on the Experiential Learning Processing Form and the accompanying supporting documents. If all is in order, the assessor will determine whether the student's experiential learning fits into appropriate competency and subject areas within the student's educational program (curriculum) at Lansing Community College. The assignment of credit must be stated in terms of equivalent courses that are offered by Lansing Community College.

Documentation

All experiential learning must be documented by the student. Documentation may be defined as, but not limited to, complete job descriptions, copies of course materials and outlines, certificates, training reports, signed supervisory verifications and evaluations on letterhead, and any other descriptive information that may provide a clear understanding of a student's background and competencies. Lansing Community College requires certification that the work or training experience is the student's own. The portfolio containing the Experiential Learning Processing Form and all supporting documents will be retained by the College. A maximum of 40 semester hours of experiential learning may be applied towards an LCC associate degree. Twenty credits must be earned in attendance at Lansing Community College.

Applicability of Credit

The assessor will determine what credit granted can be applied to the student's program on an LCC course equivalency basis. In determining whether it is appropriate to accept a student's experiential learning for credit, the major considerations should be the student's educational objective and area institutional learning achievement. Credit for experiential learning will be recorded on a student's official transcript on the basis of a course-by-course equivalency and shall be prominently identified as credit for experiential learning.

Student Appeal Procedures

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

CREDIT BY EXAMINATION

Comprehensive Exams

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

1. The student picks up an application for credit by examination at the Office of the Registrar.
2. The student completes the required information on the application and takes the examination 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 Programs (CLEP), Advanced Placement Examination (APE), and the Defense Activity for Non-Traditional Education Support (DANTES). Students in need of information about these examinations should contact the Admissions Office.

GRADUATION REQUIREMENTS, CERTIFICATES, AND DEGREES

INSTITUTIONAL REQUIREMENTS FOR CERTIFICATES OF ACHIEVEMENT

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

1. Complete a course of study approved by the College and consisting of a minimum of 30 semester credits, with no more than 10 percent of those credits acquired on the credit/no credit (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 10 semester credits in attendance at Lansing Community College.
4. File an application for graduation with the Office of the Registrar at least one semester preceding the semester of graduation.
5. Satisfy all general and specific requirements of Lansing Community College including the fulfillment of all financial obligations.

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

INSTITUTIONAL REQUIREMENTS FOR ASSOCIATE DEGREES

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

1. Complete a course of study approved by the College and consisting of a minimum of 60 semester credits, with no more than 10 percent of these credits acquired on the credit/no credit (P-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 including the fulfillment of all financial obligations.
6. File an application for graduation with the Office of the Registrar at least one semester preceding the semester of graduation.

NOTE: Students seeking an associate degree may not follow curricular guidelines which predate their first semester of enrollment. Students who were enrolled at Lansing Community College prior to fall 1996, and who are following an LCC curriculum guide with an expiration date of summer 2000 or before, are not required to satisfy the College's General Education Core Requirements. They must, however, complete a course in political science: POLS 120, American Political System, or POLS 121, State and Local Government, will satisfy this requirement for all degree programs with an expiration date of summer 2000 or before. (LAB 206, Labor Relations, will satisfy this requirement for certain programs only as indicated on specific curriculum guides.)

Those students who maintain a 3.75 or higher grade point average will be graduated summa cum laude; those who maintain a 3.50-3.74 grade point average will be graduated magna cum laude; those with a 3.25-3.49 will be graduated cum laude. Students must complete 40 semester credit hours of work at Lansing Community College to qualify for honors.

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

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

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

Associate in Applied Arts: This degree is designed for students who seek education and the acquisition of skills needed to enter the job market or to advance their current careers. This degree includes a concentration of courses in fields such as the visual arts or the performing arts. Requirements: 50-72 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 their current careers. This degree includes a concentration of courses in fields such as health care, manufacturing, and construction. Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements, and institutional associate degree requirements.

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

General Associate Degree: This degree is a customized program of study which may incorporate more than one area of concentration. 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 lifelong 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, science, and diversity. Science/technology, speech communication, and writing for students seeking an LCC associate degree. The student outcomes expected for each of the Core areas are presented below.

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

2. Global Perspectives and Diversity
   • Describe and analyze the ways in which different world societies/civilizations establish social, political, and economic order and the effect of these on individuals and societies/civilizations.
   • Describe and analyze the ways in which different world societies/civilizations view themselves.
   • Describe and analyze how different world societies/civilizations have searched for truth, justice, and an understanding of what it means to be human.
   • Describe and analyze how the major concepts within world societies/civilizations have resulted in peaceful or violent solutions to conflicts.
   • Describe and analyze how major ideas, issues, values, institutions, in world societies/civilizations have shaped cultures and the effect these have on individuals.
   • Describe and analyze how the United States includes and/or excludes diverse perspectives of different gender and ethnic groups.
   • Describe and analyze how the arts reflect the major social, political, and individual concerns of world societies/civilizations.

3. Science/Technology
   • Exhibit basic knowledge of the nature, scope, purposes, and limitations of science and technology, as well as the connections between them.
   • Demonstrate ability to gather, analyze, interpret, and draw conclusions from scientific and/or technical information.
   • Understand and apply methods of science and technology by demonstrating appropriate experimental, problem-solving, and decision-making skills in a scientific and/or technological context.
   • Understand the historical role, contemporary importance, and social and ethical implications of science and technology.
   • Evaluate the impact of scientific and/or technological change on, for example, occupations, world, national and regional economies: business, industry, and social institutions.
4. Speech Communication
- Define and explain the nature and components of the communication process.
- Use language and nonverbal behavior to express ideas and feelings clearly and responsibly in interpersonal encounters.
- Participate constructively in group discussions as a leader or member.
- Research, prepare, and deliver public speeches effectively.
- Listen, with both literal and critical comprehension, to spoken messages in a variety of communication situations.

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

HOW STUDENTS CAN SATISFY LCC GENERAL EDUCATION CORE REQUIREMENTS

Beginning fall 1996, all new students, and any previously enrolled students following an LCC curriculum guide with an expiration date of summer 2001 or beyond, must fulfill LCC General Education Core requirements in order to be awarded an associate degree. The ways in which students can satisfy these requirements are presented below. Because these may be revised each academic year, students should consult an academic advisor or the most recent edition of the College Catalog to stay informed of current options for satisfying Core requirements. Students should also be aware that not all courses that satisfy the LCC Core transfer to all institutions. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

How to Satisfy the General Education Core Requirements for Mathematics

To satisfy the General Education Core requirements for mathematics, a student must demonstrate mathematical competency. This can be done in any of the following ways:

1. Passing the MATH 112 Proficiency Exam 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 two times for purposes of satisfying the Mathematics Core)

2. Achieving a grade of 2.0 or better in one of the following approved Mathematics Core courses: MATH 112 or MATH 117. (Descriptions of these courses can be found in the Course Descriptions section of this catalog.)

3. Achieving a grade of 2.0 or better in any of the following Non-Core mathematics courses: MATH 121, MATH 125, MATH 131, MATH 151, MATH 152, MATH 201, MATH 253, MATH 254, MATH 255. (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), the Defense Activity for Non-Traditional Education Support (DANTES), or others as recognized by Lansing Community College.

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

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

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

1. Achieving a grade of 2.0 or higher in an approved Core course (credits in parentheses):
   - A Global Perspectives and Diversity—ENGL 211 (4), HUMS 211 (4), HUMS 212 (4), HUMS 213 (4), MGMT 234 (3), PSYR 211 (4), SOC 210 (4), OADM 202 (3)
   - A Science/Technology—ASTR 201 (4), BIOL 210 (4), CHEM 125 (4), CHEM 151 (4), HIST 200 (3), MATH 220 (4), PHYS 221 (4), PHYS 222 (4)
   - A Speech Communication—SPCH 105 (3), SPCH 120 (3)
   - A Writing—ENGL 222 (4), ENGL 322 (4), WRT 112 (3), WRT 113 (4), WRT 115 (4), WRT 121 (4), WRT 123 (4), WRT 124 (3)

2. Passing a Comprehensive Examination for an approved Core area course listed in #1 above in courses where such exams are available. Upon successfully completing the exam, students would receive LCC credit for the course. Students are also required to pay tuition for the course prior to taking the exam. (See 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 course credit for courses listed in #1 above through the Advanced Placement Examination (AP), the College Level Examination Program (CLEP), the Defense Activity for Non-Traditional Education Support (DANTES), or others as recognized by Lansing Community College.

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

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

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

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

HOW TO APPLY FOR THE ASSOCIATE DEGREE OR CERTIFICATE OF ACHIEVEMENT

The student submits his or her Application for Diploma/Certificate to the Office of the Registrar. It is important that the student attach copies of any authorized course substitutions or waivers and a copy of the curricular guide he or she has.
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 additional associate degree, a minimum of 16 semester credit hours must be completed at LCC in the division in which the degree is sought, non-repetitive of previously earned credits. (Note: The institutional associate degree requirement of 20 credits earned at LCC must be met by those students not receiving their first degree at LCC.)
2. All requirements for an associate degree in either arts, applied arts, business, science, or applied science must be met.
3. The College's General Education Core requirements, including demonstrated competency in mathematics, must be satisfied.
4. No additional degree will be granted in the same program or curriculum in which the first degree was earned.
5. An additional degree must be within a specific program or curriculum.
6. Exceptions to the above should be appealed to the office of the respective dean.

"Students who were enrolled at Lansing Community College prior to fall 1996, and who are following an LCC curriculum guide, an expiration date of summer 2000 or before, are not required to satisfy the College's General Education Core Requirements. They must, however, complete a course in political science. POLS 120, American Political System, or POLS 121, State and Local Government, will satisfy this requirement for all degree programs with an expiration date of summer 2000 or before. (LAPR 239, Labor Relations, will satisfy this requirement for certain programs only as indicated on specific curriculum guides.)

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 LCC certificate or degree should be able to perform competently in the area in which they majored or specialized at Lansing Community College.

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

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

The College adheres to the principle that the campus climate provide for students maximum freedom and necessary order. In order to ensure this principle, the College has established procedures for the redress of grievances by the individuals accused in such proceedings. In all cases, general rules and regulations have been established by the College to ensure the protection of student rights and the efficient operation of College programs. In cases of non-compliance 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 any person on the College premises or at College-sponsored functions (athletic events, activities, etc.), or (b) any College student or employee in connection with the performance of his or her College duties, are prohibited. For the purpose of this regulation, assault is defined as an attempt or offer, with force and violence, to do corporal hurt to another, with apparent present means of carrying out the attempt. Battery is an injury which results from an assault. Battery is an injury regardless of intent, actually done to a person by another in an angry, revengeful, rude, or insistent 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 non-attendance, 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) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of test or other academic material belonging to a member of the College faculty or staff. Any interaction between students in a testing situation may be interpreted as cheating. Academic honesty is twofold on the part of the student: first, not to cheat, and second, not to enable others to cheat.

Conduct—Interim Due Process Suspension

If a student's misconduct causes great for belief that the physical or emotional safety of any member of the College community is threatened, or that any personal or public property is jeopardized, the student's right to be on campus can be immediately suspended. A suspension of this type, called an Interim Due Process Suspension, will take effect immediately upon direction of the dean of
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.

D. Distribute copies of this regulation to all new students and employees.

II. Substance abuse is a serious but treatable condition 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.

A. 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. 826.440-1 MCLA. 333.7101 et al.

B. A conviction under this policy refers to a defendant pleading guilty or no contest and/or a guilty finding by a court of law.

Examinations

S. 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

A. Students participating in all college-sponsored activities, including field trips and athletic events, must abide by all College rules. Student organization field trips must be planned, organized, and approved according to the Student Life Policies and Procedures for Student Organizations, and, where applicable, the parking and transportation services rules of the Public Safety Department. Organizations which function outside of these policies and procedures may be put on probation and suspended or 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

A. 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 transcript 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

A. Games of any kind may only be played in the recrooms 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

A. College regulations with respect to the participation of guest speakers are outlined in the Policy for Guest Speakers. The College reserves the right to decide, non-interference with College functions or activities, and identification of the sponsoring group or individuals. Under no circumstances are members of the College community to be used to involuntary audiences.

Identification Cards

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

Laws

Students shall obey the laws enacted by federal, state, and local governments. It is appropriate that the students be aware of Acts 65 of the Public Acts of 1997.

Sec. 1. A person is guilty of a misdemeanor punishable by a fine of not more than $250.00 or by imprisonment in the county jail for not more than 90 days, or both.

A. 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 subject to discipline and that the person is in violation of the properly promulgated rules of the institution and

B. When the person is in fact in violation of such rules and

C. When, thereafter, such officer or designee directs the person to vacate the premises, building, or other structure of the institution, and

D. When the person thereafter willfully remains in or on such premises, building, or other structure and

E. When, in no remaining therein or thereon, the person constitutes:

a. A clear and substantial risk to the health or safety of other persons or of damage to or destruction of the property of the institution or

b. An unreasonable prevention or disruption of the customary and lawful functions of the institution, by occupying space necessary therefore or by use of force or by threat of force.

Sec. 2. A person is guilty of a misdemeanor punishable by a fine of not more than $250.00 or not more than $500.00 or by incarceration in the county jail for not more than 30 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, commit (a) a clear and substantial risk of physical harm to or injury to other persons or of damage to or destruction of the property of the institution or (b) an unreasonable prevention or disruption of the customary and lawful functions of the institution, by occupying space necessary therefore or by use of force or by threat of force.

Sec. 3. This act shall take effect August 1, 1997.

Obstructing and Jostling

Obstructing or threatening to obstruct College property without authorization, permission from a College official is prohibited. To obstruct or to interfere with an uninterrupted passage, or line of uninterrupted use of College property; jostling, or roughly crowding others persons on College property is also prohibited.

Organizations

No student or student organization may use campus facilities, solicits 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 of 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 accurate 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. 199 of 1996, and in the interest of providing a safe and healthy environment for the College’s students, employees, and visitors, smoking will not be permitted in Lansing Community College facilities.

Student Evaluation of Instructional Quality

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

1. Completing Student Evaluation Forms at the conclusion of each course. The forms are distributed by a person other than the instructor, and the instructor is not present at the time the students complete the forms.
2. Presenting suggestions regarding instructional quality to their instructors, their instructor’s departmental chairperson or the instructor’s divisional dean. These written or verbal suggestions are also reviewed by the College to improve instruction and assess instructional effectiveness.
3. Serving on various councils, boards, and committees of the College in order to provide input and student perspective in the development of evaluation of both instructional and support-service programs. These councils, boards, and committees are located in the various divisions of the College. Those students who have interest in serving on or contacting members of these bodies may contact the Student Life Office or the office of the dean in the appropriate division.

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

Vandalism/Theft

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

Video Cassette

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

Weapons and Explosives

Illegal or unauthorized possession of firearms, explosives, other weapons, or dangerous chemicals is not permitted on College property. The foregoing shall not prohibit lending falles 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.

Due Process is the guarantee of student civil rights under the Constitution of the United States and the laws and regulations of Michigan and Lansing Community College. Due Process is that process which prevents rights from being taken away from an individual without a fair hearing.

Student Appeals and Complaints

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

Student Appeals

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

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

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

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

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

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

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

Before initiating the formal appeal process at the divisional level, students are encouraged to first meet with the initial decision-maker involved (the instructor, for example) to attempt to resolve issues in an informal manner. When a student wishes to lodge a formal complaint regarding a person—including 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, in his or her discretion, may permit the hearings concerning each student to be conducted separately.

3. The student shall be entitled to appear in person and present his or her defense to the Judicial Board and may call witnesses on his or her behalf. The student may waive the right to appear before the Judicial Board. Should he or she elect not to appear, the student shall be considered to have waived the right to 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 expeditious hearing of his or her case.

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

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

11. A student who wishes to contest the decision of the Judicial Board may request that the President of the College (or his or her designee) review the decision of the Judicial Board. The student must request this review within 10 (ten) scheduled class days (excluding Saturday and Sunday) of notification of the Judicial Board's decision. Decisions rendered by the President (or his or her designee) will be final 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 one alternate faculty member appointed in the same way, to serve in absence of any faculty member.
5. In the event two or more divisions are involved, one faculty representative from each division and an equal number of student representatives will be in attendance.

Regulation Revisions and Additions

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

STUDENT AND STAFF SEXUAL HARASSMENT AND DISCRIMINATION

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

Sexual harassment is defined in the Michigan Elliot-Larsen Civil Rights Act (MCL 37.2101, et seq., as amended) as follows:
"...unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communications of a sexual nature when:
1. Submission to or rejection of such conduct or communication is made a term of condition, either explicitly or implicitly, of obtaining employment, public accommodations or public services, education or housing.
2. Submission to or rejection of such conduct or communication by an individual is used as a factor or criterion in making any decisions affecting such individual's employment, public accommodations or public services, education or housing.
3. Such conduct or communication has the purpose or effect of substantially interfering with an individual's employment, public accommodations or public services, education or housing environment."

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

Other notable laws and public acts that prohibit discrimination include:
1. Title VII of the Civil Rights Act of 1964, as amended, and the 1992 Civil Rights Act which prohibits discrimination on the basis of race, color, sex, religion, 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 COMPLAINTS

The guidelines/procedures below apply to LCC students or staff who bring forth informal complaints or desire to file a formal complaint regarding sexual harassment/discrimination. The investigation of these complaints will be handled through the Affirmative Action Office. Sexual harassment/discrimination must be reported.

I. Responsibility to Report

Prompt reporting of all complaints is strongly urged, since it is often difficult to trace the facts of an incident or incidents long after they have occurred. It is recommended that complaints be filed within 60 (sixty) calendar days of the alleged incident. All complaints will be investigated.

II. Retaliation/Reprisal

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

III. Receiving a Complaint

Students and staff who feel they are being sexually harassed or discriminated against should contact the Affirmative Action Director (517-483-1658). Complaint forms are available in the offices of Personnel, Divisional Deans, and Affirmative Action. 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 Affirmative Action may investigate the complaint or designate a person or persons who have been trained to investigate the alleged complaint.

A. Functions of the Investigation Team

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

B. Timetable

An investigation will begin no later than 20 (twenty) working days following the receipt of the sexual harassment/discrimination complaint form or immediately following a request form the AA/EO Officer.

C. Complaints

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

E. Confidentiality

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

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

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

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

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

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 visitors to communicate regarding various activities, events, and services. The College is also sensitive to the right of freedom of expression, particularly as provided for in the First Amendment of the Constitution of the United States. At the same time, the College is responsible for providing reasonable procedures and regulations to protect public and private property, and provide for the general safety and welfare of all members of the College community, and which provide for the regulation of the normal functions of the College.

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

DEFINITION: A poster is any written communication designed to apply to a wall or other surface for the purpose of communicating information about an event, service, idea, or activity. A poster may be in the format of, but not limited to, a sign, an announcement, or a 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 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 shall be as for a reasonable length of time depending upon the activity.
4. Designated bulletin boards are available in each building for the posting of student and staff personal notices. All student and staff personal notices will be confined to these designated bulletin boards.
5. A poster shall not exceed 18 inches by 24 inches.
6. No poster shall be placed in such a way that it covers all or part of a previously posted approved poster whose take-down date has not expired.
7. The removal of posters at or prior to the take-down date shall be the responsibility of the sponsoring organization or individual. No posters shall be removed prior to the take-down date by unauthorized individuals.
8. Lansing Community College respects the constitutional rights of freedom of expression. There are, however, responsibilities which are attendant to the exercising of these constitutional rights. The following statement is made to provide an operational balance between the rights and responsibilities of the freedom of expression and individual rights.

The following regulations are designed to facilitate student distribution of literature within the College facilities, while providing students and College personnel property reasonable protection from commercial exploitation and other related activities. Court rulings have determined that College buildings, while considered a public trust, are not considered public property subject to unregulated use by any and all individuals. The procedural regulations below are designed to facilitate the legislated instructional mission of the College to serve the students of the College community. The following procedural regulations shall be followed:

1. The distribution of literature within College buildings by students shall be...
limited to student literature tables made available for such distribution. Student literature tables will be made available in the following areas within the building:

a. In the entry lobby outside the second floor cafeteria of the Arts and Sciences Building.

b. In the Washington Square Mall lobby between the Gannon Vocational-Technical Center and the Arts and Sciences Building.

c. In the second floor lobby area of the Old Central Building.

At least two 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 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 Office of the Dean of the Student Life Office.

3. The student literature tables will be available Mondays through Thursdays from 8 a.m. to 10 p.m. and Fridays 8 a.m. to 5 p.m. during the days of regularly scheduled semesters.

4. Registered students and College recognized student clubs and organizations are required to register for the use of the student literature tables with the Student Life Office at least 72 hours prior to the time of desired use. Registrations will be accepted on a first request, first serve basis. Individual students and recognized student clubs or organizations may register for the use of a table for three consecutive days. If there are no pending requests, a registration may be renewed at the end of a previous registration. If there are no pending requests, a recognized student club or organization may request the use of one or more tables or one or more locations. If the use of multiple tables or locations, additional students or recognized student groups requesting the use of a table or location and additional tables or locations are not available, the multiple users or users will be required to give up the multiple use of tables and locations to provide for the new request.

5. A copy of the completed registration form obtained from the Student Life Office must be available at the student literature table while distribution is taking place.

6. In order to determine accountability, a sample of the material to be distributed must be placed on file with the Student Life Office at the time of registration for use. In addition, a recognized student club or organization must have a copy of the material to be distributed on file with the club or organization’s advisor.

7. The student literature table will be staffed at all times by the individual student or members of the recognized student club or organization registered for the use of the tables while the distribution of materials is taking place.

8. The literature table or recognized student club or organization must 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.

9. 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 distractions created in the path of the general flow of traffic.

10. 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.

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

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

**COLLEGE RESPONSIBILITIES**

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

1. The College will maintain appropriate prerequisites so that students will enter courses with a reasonable chance of success.

2. The College will provide facilities that are safe, secure, clean, and conducive to learning.

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**Literature Table Use Request Flow Chart**

**INDIVIDUAL STUDENT**

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

**STUDENT LIFE OFFICE**

**STUDENT ORGANIZATION**

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**Appeal of Denial of Use of Literature Table**

Any individual, registered student, 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 request to halt distribution. The appeal shall be in writing and shall be directed to the Dean of Student and Academic Support Division (or designee) within 10 calendar days of the denial or request to halt distribution. The Dean of Student and Academic Support Division (or designee) shall make a prompt investigation of the appeal, contacting the parties involved, and shall, within 10 calendar days from the date of appeal, make a decision to reinstate the distribution rights denied or halted or to uphold the original decision. If the decision of the Dean of Student and Academic Support Division is not satisfactory, the individual student or recognized student club or organization may appeal the Dean's decision to the Student Activities Board of the College. This second appeal must be in writing and presented to the Chairperson of the Student Activities Board within 10 calendar days of the decision of the Dean of Student and Academic Support Division.

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

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

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**Appeal of Denial Flow Chart**

**STUDENT ORGANIZATION**

**DEAN OF STUDENT AND ACADeMIC SUPPORT DIVISION (OR DESIGNEE)**

**STUDENT ACTIVITIES BOARD**

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

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

STUDENT RESPONSIBILITIES

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

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

SPECIAL PROGRAMS AND SERVICES

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

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

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

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

International Programs coordinates overseas study through such programs as the Japan Adventure and a network of sister college exchange relationships.

The Lansing Community College Foundation sponsors students, faculty, and programs and activities through philanthropic initiatives in the College and community. Scholarship awards to students and allocation to LCC programs are coordinated by the Foundation Board of Directors in support of the mission and goals of the College.

Library Information Services provides information and research assistance, a computer catalog listing library resources, interlibrary loan service, computerized information research service, individual and group library orientations, book renewals by phone, library use guides, dial access to the LCC Library catalog and area libraries and access to print, CD-ROM and electronic resources.

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

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

The Student Life Office enhances student leadership, development, and success through involvement in and exposure to diverse experiences and opportunities. These include Student Senate, a comprehensive student leadership development experience consisting of the Student Advisory Committee to the President, Club Council, and the Student Leadership Academy, student clubs and organizations; student activities, such as low-cost travel opportunities; campus programming of guest artists and student workshops, lectures and forums. The Student Life Office also includes the Office of Volunteer Services, and opportunities to work on the staff of The Lookout, Lansing Community College's student newspaper.

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

Volunteer Services provides volunteer mentoring, and service learning opportunities for students, faculty, staff, and the community to nurture, promote, and instill the spirit of volunteerism.

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, free programs, and referral services.

INFORMATION FOR PERSONS WITH DISABILITIES

Lansing Community College is committed to making accommodations and providing services for persons with disabilities. The College has administrative and faculty specialists who respond to visual, hearing, mobility, and alternative learning accommodation needs. They can be reached in the Office of Disability Support Services (517) 483-1184 (TDD: (517) 483-1253). The College adheres to the standards and guidelines set forth in the "Americans With Disabilities Act." Handicapped parking is available and clearly identified at Lansing Community College. For more information, call the office of Parking Services at (517) 483-1798.
DEGREE AND CERTIFICATE PROGRAMS
ASSOCIATE IN ARTS DEGREE

EFFECTIVE FALL 1996 – SUMMER 2001

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

- Pre-Accounting
- African American History
- American Studies
- Art History
- Pre-Business
- Criminal Justice
- Pre-Economics
- Elementary Education
- Fine Arts
- Foreign Language
- Geography
- History
- Humanities
- International Studies
- Liberal Arts
- Literature
- Philosophy
- Political Science
- Psychology
- Religion
- Secondary Education
- Social Science
- Sociology
- 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 and four-year institutions in Michigan.
- Students should consult the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

1. GENERAL EDUCATION REQUIREMENTS

   35 credits

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

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

   Students who complete Core courses other than those indicated below, and who wish to apply those credits toward the Associate in Arts degree, should contact a faculty advisor or counselor in Room 103 of the Arts and Sciences Building, telephone number (517) 489-9194.

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

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

   1. English Composition

      8 Credits

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

      - Complete one course from the following:

        WRIT 121 (4) or WRIT 122 (4)

      AND

      - Complete one course from the following:

        WRIT 122 (4) ENGL 122 (4) WRIT 123 (4) ENGL 124 (4)

      or

      - If WRIT 121 is waived, select ENGL 122 or WRIT 122. And a second WRIT or ENGL course with a number of 200 or higher.

   2. Science and Mathematics

      Minimum of 8 credits

      Completing at least one course from A or B will satisfy the LCC General Education Core Requirement in Science and Technology. If C is not chosen in this category, then the LCC Core requirement for Mathematics must be met by one of the options described on page 22 of this catalog.

      • Complete two of the three choices listed below (A, B, C):

        A. Complete one course or course pair in Physical Science from the following:

           ASTR 201 (4) GEOG 222 (4) METR 220 (4)

           CHEM 235 (4) GEOG 230 (4) PHYS 225 (4)

           CHEM 151 & 151 (5) ISC 121 (4) PHYS 211 & 212 (5)

           GEOG 221 (4) ISC 121 (4) PHYS 213 & 214 (5)

      B. Complete one course or course pair in Biological Science from the following:

           ANAT 145 (4) BIOCH 128 (4) ISCI 132 (4)

           ANAT 151 (3) BIOCH 210 (4) MCR 203 & 204 (4)

           ANAT 261 (4) BIOD 269 (4) PHSY 202 (4)

           BIOL 121 (4) BIOE 265 (4)

           BIOL 127 (4) ISCI 122 (4)

      C. Complete one course in Mathematics from the following:

           MATH 121 (4) MATH 141 (3) STAT 179 (3)

           MATH 125 (3) MATH 121 (4) STAT 215 (4)

           MATH 122 (3) MATH 122 (4)

           MATH 130 (3) MATH 221 (3)

   3. Social Science

      Minimum of 8 credits

      Completing at least one course from Category 3 OR Category 4 will satisfy the LCC General Education Core Requirement in Global Perspectives and Diversity.

      • Complete one course in Political Science from the following:

        POLS 120 (4) or POLS 121 (4)

        • Complete one course or course pair from the following:

        ECON 120 (4) GEOG 203 (4) SOC 120 (4)

        ECON 201 & 202 (6) PSYC 200 (4)

   4. Humanities

      8 credits

      Completing at least one course from Category 3 OR Category 4 will satisfy the LCC General Education Core Requirement in Global Perspectives and Diversity.

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

        GROUP A

        ENGL 211 (4) HUMS 211 (4) PHIL 211 (4)

        HIST 211 (4) HUMS 213 (4) RELG 211 (4)

        GROUP B

        ENGL 212 (4) HUMS 212 (4) RELG 212 (4)

        HIST 212 (4) HUMS 214 (4) PHIL 212 (4)

        HIST 214 (4)

   5. Speech

      Complete the following course: SPCH 120 (3)

   3 credits

II. SUBJECT AREA CONCENTRATIONS

   AND LIMITED CHOICE ELECTIVES

   25 credits

   The following Subject Area Concentrations list the remaining required and recommended courses that will apply toward the 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 parenthesis.
**PRE-ACCOUNTING**

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 213 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - MATH 141 Calculus with Applications (3)
   - STAT 215 Introduction to Probability and Statistics (4)
4. Complete one of the following (3–4 credits):
   - CISB 100 Introduction to Computer Information Systems (3)
   - CPSC 120 Introduction to Computers (3)
5. Complete one of the following (3 credits):
   - MATH 122 College Algebra II and Trigonometry (3)
   - MATH 130 Finite Mathematics (3)
6. Complete a minimum of 2–3 credits from the list of Limited Choice Electives at the end of this section.

**AFRICAN AMERICAN HISTORY**

1. Complete courses other than HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (20 credits):
   - HIST 150 African American History (4)
   - HIST 211 U.S. History to 1877 (4)
   - HIST 212 U.S. History: 1877 to the Present (4)
   - HIST 214 African History (4)
   - HIST 260 Conflict and Revolution in Southern Africa (4)
3. Complete a minimum of 7 credits from the following:
   - ENGL 260 African American Literature (4)
   - SOCL 255 Contemporary Social Problems (3)
   - Any foreign language numbered 121, 122, 201, or 202 (4)

**AMERICAN STUDIES**

1. Complete courses other than HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (20 credits):
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - HIST 211 U.S. History to 1877 (4)
   - HIST 212 U.S. History: 1877 to the Present (4)
   - HUMS 215 American Civilization (4)
3. Complete a minimum of 8 credits from the following:
   - ENGL 260 African American Literature (4)
   - HIST 150 African American History (4)
   - HIST 220 Michigan History (4)
   - POLS 120 American Political System (4)

**ART HISTORY**

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 170 Western Art and Music (4)
   - Any foreign language numbered 121, 122, 231, or 292 (4)

**PRE-BUSINESS**

1. Complete ECON 201 and ECON 202 in addition to POLS 120 or 121 to satisfy the Social Science General Education Requirement.
2. Complete MATH 121 to satisfy part of the Science and Mathematics General Education Requirement.
3. Complete the following required courses (11 credits):
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - BUSN 118 Introduction to Business (3)
4. Complete one of the following (3 credits):
   - CISB 100 Introduction to Computer Information Systems (3)
   - CPSC 120 Introduction to Computers (3)
5. Complete one of the following (3–4 credits):
   - ECON 213 Economic/Business History of the U.S. (3)
   - MATH 141 Calculus with Applications (3)
   - MATH 151 Calculus I (4)
   - PSYC 201 Introduction to Psychology (4)
   - SOCL 120 Introduction to Sociology (4)
   - STAT 215 Introduction to Probability and Statistics for Business (4)
6. Complete a minimum of 5–6 credits from the list of Limited Choice Electives at the end of this section.

**CRIMINAL JUSTICE**

1. Complete the following required courses (15 credits):
   - CJJS 111 Introduction to Criminal Justice (3)
   - CJJS 112 Crime Causes and Conditions (3)
   - CJJS 113 Criminal Law (3)
   - CJJS 116 Juvenile Problems: Control and Prevention (3)
   - CJJS 117 Introduction to Corrections (3)
2. Complete a minimum of 10 credits from the following:
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 202 Psychology of Personality (3)
   - PSYC 203 Social Psychology (3)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 250 Abnormal Psychology (3)
   - SOCL 120 Introduction to Sociology (4)
   - SOCL 255 Contemporary Social Problems (3)
   - SOCL 290 Minorities Groups (3)
PRE-ECONOMICS

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

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

3. Complete the following required courses (6 credits):
   - CFSC 120 Introduction to Computers (3)
   - MATH 122 College Algebra II and Trigonometry (3)

4. Complete a minimum of 17 credits from the following:
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - ECON 213 Economic and Business History of the U.S. (3)
   - ECON 221 International Economics (3)
   - MATH 141 Calculus with Applications (3)
   - MATH 151 Calculus I (4)
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)
   - MATH 254 Differential Equations (3)
   - MATH 269 Linear Algebra (3)
   - PSYC 209 Introduction to Psychology (4)
   - SOCL 120 Introduction to Sociology (4)
   - STAT 215 Probability and Statistics (4)
   - Any foreign language numbered 121, 122, 201, or 202 (4)

FOREIGN LANGUAGE

1. Complete the following required course (3 credits):
   - SPCH 250 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. JPN 121 Elementary Japanese I (4)
   - JPN 122 Elementary Japanese II (4)
   - JPN 201 Intermediate Japanese I (4)
   - JPN 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 6 credits from 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 (9 credits):
   - GEOG 120 Introduction to Geography (3)
   - GEOG 121 Physical Geography (3)
   - GEOG 202 Geography of North America (3)

3. Complete a minimum of 16 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - ECON 203 Power, Authority, and Exchange (4)
   - GEOG 203 Economic Geography (3)
   - GRET 205 Principles of Geographic Information Systems (3)
   - METR 228 Introduction to Meteorology (4)
   - POLS 140 Global Perspectives (3)
   - POLS 270 International Relations (3)
   - SOCL 120 Introduction to Sociology (3)
   - STAT 170 Introduction to Statistics (3)
   - Any foreign language numbered 121, 122, 201, or 202 (4)
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**ASSOCIATE IN ARTS DEGREE**

**HISTORY**

Curriculum Code: 10197

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

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

3. Complete a minimum of 16 credits from the following:
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - HIST 150 African American History (4)
   - HIST 210 Studies in American History (4)
   - HIST 220 Michigan History (4)
   - HIST 230 British History (4)
   - HIST 290 Conflict and Revolution in Southern Africa (4)
   - RELG 250 Religions of East Asia (4)

**HUMANITIES**

Curriculum Code: 10119

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

2. Complete the following required courses (6 credits):
   - HUMS 213 World Civilizations I (4)
   - HUMS 214 World Civilizations II (4)

3. Complete a minimum of 20 credits from the following:
   - ENGL 201 Introduction to Poetry (4)
   - ENGL 202 Introduction to Drama (4)
   - ENGL 203 Introduction to Prose (4)
   - ENGL 211 World Literature I (4)
   - ENGL 212 World Literature II (4)
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - HIST 211 U.S. History to 1877 (4)
   - HIST 212 U.S. History: 1877 to the Present (4)
   - HUMS 130 Western Art & Music (4)
   - HUMS 160 Mythology (4)
   - HUMS 212 History of Art I (4)
   - HUMS 212 History of Art II (4)
   - PHIL 151 Introduction to Logic (4)
   - PHIL 152 Introduction to Ethics (4)
   - PHIL 153 Knowledge & Reality (4)
   - PHIL 211 World Philosophies I (4)
   - PHIL 212 World Philosophies II (4)
   - RELG 211 World Religions I (4)
   - RELG 212 World Religions II (4)

**INTERNATIONAL STUDIES**

Curriculum Code: 10252

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

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

3. Complete one of the following (3 credits):
   - POLS 140 Politics in Global Perspective (3)
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)

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

5. Complete a minimum of 14 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - ECON 120 Power, Authority and Exchange (4)
   - ECON 201 Principles of Economics - Macro (3)
   - ECON 202 Principles of Economics - Macro (3)
   - ECON 221 International Economics (3)
   - ENGL 211 World Literature I (4)
   - ENGL 212 World Literature II (4)
   - GEOG 203 Economic Geography (3)
   - HIST 214 African History (4)
   - HIST 230 British History (4)
   - HUMS 220 Japanese Civilization (4)
   - PHIL 211 World Philosophy I (4)
   - PHIL 212 World Philosophy II (4)
   - POLS 200 Sex Roles and Political Change (3)
   - PSYC 200 Introduction to Psychology (4)
   - RELG 211 World Religions I (4)
   - RELG 212 World Religions II (4)
   - SOC 120 Introduction to Sociology (3)
   - SOC 185 The African (2)
   - SOC 260 Minority Groups (3)

**LIBERAL ARTS**

Curriculum Code: 10251

Complete a minimum of 25 credits from the list of Limited 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:

- BIOI 210 Natural Resource Conservation (4)
- CHEM 155 Chemistry in Society (4)
- CPSC 120 Introduction to Computers (3)
- ENGL 256 American Literature II (4)
- MATH 211 Math for Liberal Arts I (3)
- PHIL 152 Introduction to Ethics (4)
- PSYC 200 Introduction to Psychology (4)
- RELG 210 Introduction to Sociology (4)
- SOC 260 Intercultural Communication (3)

Any foreign language numbered 121, 122, 201, or 202 (4)

**LITERATURE**

Curriculum Code: 10124

1. Complete the following required courses (12 credits):
   - ENGL 201 Introduction to Poetry (4)
   - ENGL 202 Introduction to Drama (4)
   - ENGL 203 Introduction to Prose (4)

2. Complete a minimum of 16 credits from one of the following choices [A,B]:
   - A: ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - ENGL 260 African American Literature (4)
   - ENGL 266 British Literature I (4)
   - ENGL 267 British Literature II (4)
   - ENGL 290 Shakespeare (4)
   - HUMS 160 Mythology (4)
   - PHIL 151 Introduction to Logic (4)
   - RELG 241 Old Testament (4)

   Any foreign language numbered 121, 122, 201, or 202 (4)

   B: EDUC 201 Educational Pracicum I (2)
   - EDUC 202 Introduction to Education (3)
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 204 Educational Psychology (3)
### Philosophy

**Curriculum Code: 10159**

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

2. Complete the following required courses (12 credits):
   - PHIL 211 World Philosophies I (4)
   - PHIL 212 World Philosophies II (4)
   - PHIL 151 Introduction to Logic (4)

3. Complete a minimum of 16 credits from the following:
   - HUMS 120 Western Art and Music (4)
   - HUMS 213 World Civilizations I (4)
   - HUMS 214 World Civilizations II (4)
   - HUMS 225 Great Lakes Native Americans: History and Tradition (4)
   - PHIL 152 Introduction to Ethics
   - OR
   - PHIL 153 Knowledge and Reality (4)
   - PHIL 260 Contemporary Ethical Problems (4)
   - RELG 250 Religions of East Asia (4)
   - Any foreign language numbered 121, 122, 201, or 202 (4)

### Psychology

**Curriculum Code: 10215**

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

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

3. Complete the following required course (3 credits):
   - CPSC 120 Introduction to Computers (3)

4. Complete one of the following two courses (3 credits):
   - PSYC 203 Social Psychology (3)
   - PSYC 204 Educational Psychology (3)

5. 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)

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

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

5. Complete a minimum of 10 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - POLS 230 Sex Roles and Political Change (3)
   - SOCL 120 Introduction to Sociology (3)
   - SOCL 254 Marriage and Family (3)
   - STAT 170 Introduction to Statistics (3)
   - Any foreign language numbered 121, 122, 201, or 202 (4)
   - Any PSYC course not used to complete one of the above requirements

### Political Science

**Curriculum Code: 10759**

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

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

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

4. Complete the following required courses (7 credits):
   - POLS 140 Politics in Global Perspectives (3)
   - POLS 121 State and Local Government (4)

5. Complete a minimum of 18 credits from the following:
   (NOTE: If STAT 170 is selected, then select MATH 121 to satisfy part of the Science and Mathematics General Education Requirement)
   - CPSC 120 Introduction to Computers (3)
   - ECON 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 200 Political Behavior (3)
   - POLS 205 Government Internship (3)
   - POLS 230 Sex Roles and Political Change (3)
   - POLS 240 Introduction to Public Policy (3)
   - POLS 250 American Political Parties and Interest Groups (3)
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)
   - PSYC 200 Introduction to Psychology (4)
   - SOCL 255 Contemporary Social Problems (3)
   - SOCL 260 Minority Groups (3)
   - STAT 170 Introduction to Statistics (3)
   - Any foreign language numbered 121, 122, 201, or 202 (4)

### Religion

**Curriculum Code: 10751**

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

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

3. Complete a minimum of 19-20 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - PHIL 152 Introduction to Ethics
     OR
   - PHIL 260 Contemporary Ethical Problems (4)
   - RELG 241 Old Testament (4)
   - RELG 242 New Testament (4)
   - RELG 250 Religions of East Asia (4)
   - Any foreign language numbered 121, 122, 201, or 202 (4)
SECONdARY EDUCATION

1. Complete PSYC 209 to satisfy part of the Social Science General Education Requirement.

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

3. Complete one of the following four courses (3–4 credits):
   - ANTH 270 Cultural Anthropology (3)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 222 Adolescent Psychology (3)
   - SOCL 126 Introduction to Sociology (4)
   - SOCL 256 Minority Groups (3)

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

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

SOCIAL SCIENCE

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 the following (6 credits):
   - A. ECON 202 Principles of Economics - Macro (3)
   - B. GEOG 121 Physical Geography (3)
   - GEOG 202 Geography of North America (3)
   - GEOG 203 Economic Geography (3)
   - C. POLS 200 Political Behavior (3)
   - POLS 230 Sex Roles and Political Change (3)
   - POLS 250 American Political Parties (3)
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)
   - D. PSYC 262 Psychology of Personality (3)
   - PSYC 263 Social Psychology (3)
   - PSYC 284 Educational Psychology (3)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 221 Child Psychology (3)
   - PSYC 222 Adolescent Psychology (3)
   - PSYC 250 Abnormal Psychology (3)
   - E. ANTH 270 Cultural Anthropology (3)
   - ANTH 275 Physical Anthropology and Archaeology (3)
   - SOCL 254 Marriage and Family (3)
   - SOCL 255 Contemporary Social Problems (3)
   - SOCL 260 Minority Groups (3)

4. Complete a minimum of 8 credits numbered 120 or higher from the list of Limited Choice Electives at the end of this section. Courses in social sciences, foreign languages, statistics, computer science, and mathematics are recommended.

SOCIOLoGY

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

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

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

4. Complete the following required courses (12 credits):
   - ANTH 270 Cultural Anthropology (3)
   - SOCL 254 Marriage and Family (3)
   - SOCL 255 Contemporary Social Problems (3)
   - SOCL 260 Minority Groups (3)

5. Complete a minimum of 13 credits from the following:
   - CPSC 120 Introduction to Computers (3)
   - ECON 100 Principles of Economics - Micro (3)
   - ECON 201 Principles of Economics - Macro (3)
   - GEOG 200 World Regional Geography (4)
   - GEOG 201 Economic Geography (3)
   - MATH 121 College Algebra I (4)
   - POLS 230 Sex Roles and Political Change (3)
   - POLS 270 International Relations (3)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 203 Social Psychology (3)
   - STAT 170 Introduction to Statistics (3)
   - Any foreign language numbered 121, 122, 201, or 202 (4)

SPEECH COMMUNICATION

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

2. Complete the following required courses (8 credits):
   - SPCH 130 Fundamentals of Public Speaking (3)
   - SPCH 140 Interpersonal Communication (3)
   - SPCH 290 Intercultural Communication (3)

3. Complete a minimum of 6 credits from the following:
   - SPCH 110 Oral Communication in the Workplace (3)
   - SPCH 230 Advanced Public Speaking (3)
   - SPCH 240 Nonverbal Communication (3)
   - SPCH 270 Mass Communication (3)

4. Complete a minimum of 10 credits from the following:
   - Any foreign language numbered 121, 122, 201, or 202 (4)
   - ANTH 270 Cultural Anthropology (3)
   - CPSC 120 Introduction to Computers (3)
   - LING 230 Introduction to Linguistics (3)
   - PHIL 151 Introduction to Logic (4)
   - POLS 200 Political Behavior (4)
   - PSYC 200 Introduction to Psychology (4)
   - Any foreign language numbered 121, 122, 201, or 202 (4)
LIMITED CHOICE ELECTIVES FOR ASSOCIATE IN ARTS DEGREE

Various courses have been approved as electives for the Associate in Arts degree. In concentrations which provide for limited choice electives, courses may be selected from the following:

1. Unrestricted number of credit hours from courses with any of the course codes below and with numbers 120 and higher:
   - ANAT
   - ECON
   - GEOL
   - JPN
   - PHI
   - SIGN
   - WRIT
   - ANTH
   - EDUC
   - GRMN
   - LING
   - PHYS
   - SOC
   - ASTR
   - ENGL
   - HIST
   - MATH
   - POLS
   - SPAN
   - BIOC
   - ENFD
   - HONR
   - METR
   - PSYC
   - SPCH
   - CHEM
   - ESLA
   - HUMS
   - MIRC
   - READ
   - SPEL
   - CHIN
   - FREN
   - FSL
   - OCCN
   - RELG
   - STAT
   - CPSC
   - GEOG
   - JAPN
   - PHFY
   - SOUS
   - VCOL
   - CLEW
   - HIST
   - POLS
   - SPAN

2. Unrestricted number of credit hours from the following courses:
   - CHOV 101
   - MATH 112
   - SOWK 101
   - CISB 200
   - MATH 117
   - SPCH 113
   - CJUS 101
   - MGMT 234
   - WRIT 115
   - GERO 100
   - OADM 275

3. Credit hours restricted to six—from courses with any course codes listed in 1. above, and with numbers 110 through 119.

4. Credit hours restricted to eight—from the following courses:
   - ACCG 210, 211
   - ARTS 102, 105, 131, 132, 140, 141, 145, 148, 201, 204, 205, 240
   - BUSN 118
   - CISB 100, 120
   - CJUS 102, 103, 106, 131
   - GERO 101
   - HUSE 100, 101, 110, 112
   - IMAG 111, 114, 117, 202, 207, 226
   - LADB 200
   - LEGL 215, 216
   - MGMT 228
   - METC 110
   - MUSC 182, 199, 200
   - PFFT 110
ASSOCIATE IN SCIENCE DEGREE

EFFECTIVE FALL 1996 – SUMMER 2001

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

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

The specific requirements for this degree are presented below. A minimum of 66 credits is required. This degree guide consists of General Education Requirements and a Subject Area Concentration. The curriculum is structured to enable students to satisfy the LCC General Education Core Requirements, as well as the MACRAO Transfer Agreement between two-year and four-year institutions in Michigan.

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

NOTE: Students should be aware that general education and subject area requirements vary from one college or university to another. Prior to beginning this curriculum, students should see an academic advisor or counselor in the Counseling and Advising Center (Room 103 of the Arts and Sciences Building, telephone number (517) 483-1904) or contact the school to which they will transfer for specific transfer institution 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 Academic Affairs Office, Room 110, Arts and Sciences Building.

I. GENERAL EDUCATION REQUIREMENTS 35 credits

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

- Lansing Community College General Education Core Requirements in the areas of mathematics, global perspectives and diversity, writing, science and technology, and speech communication. (Complete information about LCC Core requirements can be found on page 32 of this catalog.)
- The MACRAO Transfer Agreement. (See Transfer Information in this section of the catalog for a list of MACRAO requirements.)
- Additional General Education Requirements established specifically for this Associate in Science Degree.

Before selecting general education courses, students should consult the SUBJECT AREA CONCENTRATIONS below for possible general education recommendations. Credits for each course have been indicated in parenthesis.

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

1. English Composition 8 credits

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

- Complete one course from the following:
  - WRIT 121 (4) OR WRIT 122 (4)

- Complete one course from the following:
  - WRIT 122 (4) OR ENG 122 (4) OR WRIT 132 (4) OR ENGL 132 (4)

- 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 8 credits

Completing at least one course in Mathematics and/or Science satisfies the LCC General Education Core Requirement in science and technology. If C is not chosen in this category, then the LCC Core requirement for Mathematics must be met by one of the options described on page 32 of this catalog:

- A. Complete one course in Science. (Refer to the following:
  - CHEM 151 & 151L (5) OR MTH 220 (4)
  - PHYS 215 & 225 (6)
  - GEOL 221 (4) OR OCNL 225 (4)
  - PHYS 215 & 225 (6)

- B. Complete one course in Mathematics. (Refer to the following:
  - ANAT 201 (4) OR BIOL 128 (4) OR BIOL 265 (4)
  - BIOL 121 (4) OR BIOL 210 (4) OR MICRO 203 & 204 (4)
  - BIOL 127 (4) OR BIOL 260 (4) OR PSYG 202 (4)

- C. Complete one course in Mathematics. (Refer to the following:
  - MATH 121 (4) OR MATH 141 (4)
  - MATH 126 (5) OR MATH 151 (4)
  - MATH 122 (3) OR MATH 152 (4)
  - MATH 130 (3) OR MATH 201 (3)

3. Social Science 8 credits

Completing at least one course in Social Science satisfies the institutional Core requirement in Global Perspectives and Diversity.

- Complete one course in Social Science.
  - ECON 120 (4)
  - GEOG 200 (4)
  - SOC 120 (4)
  - ECON 201 & 202 (6)
  - PSYC 200 (4)

4. Humanities 8 credits

Completing at least one course in Humanities satisfies the institutional Core requirement in Global Perspectives and Diversity.

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

GROUP A
- ENGL 211 (4)
- HIST 211 (4)
- HUMS 211 (4)
- PHI 211 (4)

GROUP B
- ENGL 212 (4)
- HIST 212 (4)
- HUMS 212 (4)
- RELG 211 (4)
- PHI 212 (4)

5. Speech 3 credits

Complete the following course: SPCH 120 (3)

II. SUBJECT AREA CONCENTRATIONS 25 credits

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

LANSING COMMUNITY COLLEGE CATALOG 1996-97 ▼ 41
BIOLOGY

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

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

3. Complete a minimum of 12 credits from the following:
   - BIOL 210: Natural Resource Conservation (4)
   - BIOL 250: Botany (4)
   - BIOL 265: Zoology (4)
   - BIOL 270: Genetics (3)
   - BIOL 275: Molecular Biology I (4)
   - CHEM 251: Organic Chemistry Lecture I (4)
   - CHEM 272: Organic Chemistry Laboratory II (2)
   - MIRC 203: Microbiology (3)
   - MIRC 204: Microbiology Laboratory I (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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<tbody>
<tr>
<td>CHEM 151</td>
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<td>CHEM 151</td>
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<tr>
<td>MATH 121</td>
<td>STAT 170</td>
</tr>
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<td>BIOL 127</td>
<td>BIOL 128</td>
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</tbody>
</table>

CHEMISTRY

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

2. Complete the following required courses (20 credits):
   (NOTE: In order to complete sequences, MATH 253, PHYS 216, and PHYS 226 are also recommended.)
   - BIOL 127: Cell Biology (4)
   - CHEM 152: General Chemistry Lecture II (3)
   - CHEM 152: General Chemistry Laboratory II (1)
   - CHEM 251: Organic Chemistry I (4)
   - CHEM 252: Organic Chemistry II (4)
   - CHEM 272: Organic Chemistry Laboratory (2)
   - MATH 152: Calculus II (4)
   - PHYS 215: Physics I (5)
   - PHYS 225: Physics Laboratory I (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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<tr>
<th>I</th>
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<tr>
<td>CHEM 151</td>
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<td>CHEM 252</td>
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<tr>
<td>CHEM 151</td>
<td>CHEM 152</td>
<td>PHYS 215</td>
<td>PHYS 225</td>
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</table>

COMPUTER SCIENCE

1. Complete MATH 151 to satisfy part of the Science and Mathematics General Education Requirement.

2. Complete the following required courses (24 credits):
   (NOTE: In order to complete sequences, PHYS 216 is also recommended.)
   - CPSC 200: Algorithms and Computing with C++ (4)
   - CPSC 200: Data Structures (4)
   - CPSC 200: Data Structures (3)
   - MATH 152: Calculus II (4)
   - MATH 253: Calculus III (4)
   - PHYS 215: Physics I, Mechanics (5)

3. Complete a minimum of 3 credits from the following:
   - MATH 254: Differential Equations (3)
   - MATH 280: Linear Algebra (3)
   - STAT 215: Probability and Statistics (4)

ENVIRONMENTAL SCIENCE

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

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

3. Complete the following required courses (22 credits):
   - BIOL 128: Organismal Biology (4)
   - BIOL 210: Natural Resource Conservation (4)
   - CHEM 182: Introductory Organic Chemistry (3)
   - CHEM 182: Introductory Organic Chemistry Laboratory I (1)
   - CPSC 120: Introduction to Computers I (3)
   - GEOL 230: Environmental Geology (4)
   - STAT 170: Introduction to Statistics (3)

4. Complete a minimum of 4 credits from the following:
   - BIOL 265: Botany (4)
   - BIOL 265: Zoology (4)
   - GEOL 121: Physical Geography (3)
   - METR 203: Meterology 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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<th>I</th>
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<tr>
<td>MATH 121</td>
<td>STAT 170</td>
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</table>
**GEOSCIENCE**

Curriculum Code: 10174

1. Complete MATH 126, CHEM 151, and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.

2. Complete the following required courses (16 credits):
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 162 General Chemistry Laboratory II (1)
   - GEOL 221 Earth Materials and Processes Physical Geology (4)
   - GEOL 222 Earth and Life Through Time Historical Geology (4)
   - GEOL 230 Environmental Geology (4)

3. Complete a minimum of 10 credits from the following:
   - NOTE: PHYS 215 and 216 may be substituted for PHYS 201 and 202 with the appropriate math background.
   - CPSC 120 Introduction to Computers (3)
   - GEOL 210 Geology Field Studies (1)
   - METR 220 Introduction to Meteorology (4)
   - OCNL 225 Basic Oceanography (4)
   - PHYS 201 Introductory Physics I (4)
   - PHYS 202 Introductory Physics II (4)
   - PHYS 225 Physics I Laboratory (1)
   - PHYS 226 Physics II Laboratory (1)

   **NOTE:** The following is 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>
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<td>MATH 126</td>
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</table>

**MEDICAL PRE-PROFESSIONAL**

Curriculum Code: 10794

1. Complete MATH 126, CHEM 151, and CHEM 161 to satisfy part of the Social Science General Education Requirement.

2. Complete the following required courses (16 credits):
   - BIOL 127 Cell Biology (4)
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 162 General Chemistry Laboratory II (1)
   - PHYS 201 Introductory Physics I (4)
   - PHYS 202 Introductory Physics II (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>
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**PHYSICS/PRE-ENGINEERING**

Curriculum Code: 10200

1. Complete MATH 151 to satisfy part of the Science and Mathematics General Education Requirement.

2. Complete the following required courses (19 credits):
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)
   - MATH 254 Differential Equations (3)
   - MATH 255 Linear Algebra (5)
   - PHYS 215 Physics I Mechanics (5)
   - PHYS 225 Physics I Laboratory (1)
   - PHYS 226 Physics II Mechanics (5)
   - PHYS 227 Physics II Laboratory (1)

3. Complete a minimum of 6 credits from the following:
   - CPSC 230 Algorithms and Computing C++ (4)
   - CPSC 260 Discrete Structures (4)
   - CPSC 280 Data Structures (3)
   - MATH 281 Honors Math Seminar I (1)
   - STAT 215 Probability and Statistics (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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<td>MATH 253</td>
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<tr>
<td>CHEM 161</td>
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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 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
AAS .......................... Associate Degree Applied Arts
AAA .......................... Associate Degree Applied Science
AC .......................... Certificate of Achievement
CC .......................... Certificate of Completion
ACCOUNTING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10162 (Effective Fall 1996–Summer 2001)

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

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 58 of this catalog.

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

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 219, telephone number (517) 483-1652.

REQUIREMENTS

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<th>COURSE</th>
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<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 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 230</td>
<td>Cost Accounting</td>
<td>4</td>
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<tr>
<td>ACGG 240</td>
<td>Federal Income Tax I</td>
<td>4</td>
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<tr>
<td>ACGG 260</td>
<td>Microcomputer Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I: Basic Principles</td>
<td>3</td>
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</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)
- Writing Core Area
- Speech Communication Core Area
- Scientific Technology Core Area
- Global Perspectives and Diversity Core Area
12 Credits

CHOICE 2: Accounting Specialty Area
- ACGG 160 | Payroll Systems and Business Taxes | 2 |
- ACGG 231 | Managerial Accounting | 4 |
- ACGG 235 | Budgeting | 2 |
- ACGG 241 | Federal Income Tax II | 4 |
- ACGG 250 | Advanced Accounting | 4 |
- ACGG 260 | Governmental Accounting | 4 |
- ACGG 290 | Auditing | 3 |
11–12 Credits

CHOICE 3: Other Accounting and Business Related Courses
(See Note 1)
- ACGG 245 | Accounting Internship | 2 |
- ACGG 271 | Principles of Finance | 3 |
- INSU 265 | Principles of Risk and Insurance | 3 |
- LEGL 219 | Advanced Business Law for Accounting Majors | 4 |
5 Credits

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 ask for any reason are unable to follow the course sequence suggested below. For example, those who are part-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>LEGL 215</td>
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ACCOUNTING CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10714 (Effective Fall 1996–Summer 2001)

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

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<tr>
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<tr>
<td>ACGG 160</td>
<td>Payroll Systems and Business Taxes</td>
<td>2</td>
</tr>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 221</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Microcomputer Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS
TOTAL: 12–15 CREDITS
Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Accounting Specialty
- ACGG 140 | Individual Income Taxes | 3 |
- ACGG 235 | Budgeting | 2 |
- Choice 2: Word Processing
- CABS 111 | Beginning Wordperfect for the Office | 2 |
- CABS 114 | Wordperfect - Beginning for DOS | 2 |
- CABS 135 | Wordperfect - Advanced for DOS | 2 |
- CABS 121 | Wordperfect for Windows | 2 |
- CABS 213 | Advanced Microsoft Word | 2 |
- Choice 3: Office Skills
- OADM 195 | Human Behavior in the Workplace | 3 |
- OADM 216 | Records and Information Management II | 4 |
- OADM 229 | Administrative Office Management | 4 |
- Choice 4: Written Communication
- WRIT 115 | Business Communications | 3 |
- WRIT 121 | Composition I | 4 |

ELECTIVES
Total: 2 Credits
Complete the indicated number of credits in courses of your choice.

MINIMUM TOTAL: 31

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>ACGG 160</td>
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<td>OADM 215</td>
<td>ACGG 260</td>
<td>Lim.Ch.</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Elec.</td>
</tr>
</tbody>
</table>
ACCOUNTING, C.P.A. EXAM PREPARATION ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10255 (Effective Fall 1996-Summer 2001)

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 master's C.P.A. is eligible to do that other accountants cannot in that of external auditors, which involves expressing an independent opinion on financial statements prepared by others. Some public accounting experience is required prior to certification in some states. The student is advised to review the requirements for certification as defined by the State Board of Accountancy. In addition, students should contact the State of Michigan Department of Licensing and Regulation to receive an authoritative list of requirements to set for the C.P.A. exam.

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 48 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, some students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 52.

INFORMATION

Contact the Business Careers Department, Old General Building, Room 219, telephone number (517) 483-1422.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT HOURS</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</td>
</tr>
<tr>
<td>ACGG 221</td>
<td>Intermediate Accounting II</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Cost Accounting</td>
</tr>
<tr>
<td>ACGG 240</td>
<td>Federal Income Tax I</td>
</tr>
<tr>
<td>ACGG 241</td>
<td>Federal Income Tax II</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Microcomputer Accounting Systems</td>
</tr>
<tr>
<td>ACGG 299</td>
<td>Auditing</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
</tr>
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<td>LEGL 219</td>
<td>Advanced Business Law for Accounting Majors</td>
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LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ACGG 250</td>
<td>Advanced Accounting</td>
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<td>ACGG 260</td>
<td>Governmental Accounting</td>
</tr>
<tr>
<td>ACGG 293</td>
<td>Governmental Accounting</td>
</tr>
<tr>
<td>ACGG 296</td>
<td>CPA Review - Tax, Managerial &amp; Cost, Government &amp; Not-for-profits</td>
</tr>
<tr>
<td>ACGG 297</td>
<td>CPA Review - Business Law</td>
</tr>
<tr>
<td>ACGG 298</td>
<td>CPA Review - Auditing</td>
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<tr>
<td>ECON 201</td>
<td>Principles of Economics - Micro</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL     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>COURSE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>20</td>
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<tr>
<td>ACGG 211</td>
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<td>ACGG 220</td>
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<td>21</td>
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<tr>
<td>ACGG 260</td>
<td>20</td>
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<td>ACGG 293</td>
<td>20</td>
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<td>ACGG 294</td>
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<td>ACGG 298</td>
<td>20</td>
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<td>ECON 201</td>
<td>20</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1995-97 ★ 47
### Managerial Accounting

**Associate in Business Degree**

Curriculum Code: 10247 (Effective Fall 1996–Summer 2001)

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

**Prerequisites**

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

**General Education**

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

**Information**

Contact the Business Careers Department, Old Central Building, Room 219, telephone number (517) 483-1522.

**Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 209</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 230</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 231</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 260</td>
<td>Microcomputer Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 190</td>
<td>Introduction to Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 193</td>
<td>Probability and Statistics for Quality Assurance</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 205</td>
<td>Cost of Quality</td>
<td>3</td>
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</table>

**Limited Choice Requirements**

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

**Choice 1:** General Education Core Areas  
(See the General Education section above)  
12 Credits

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

**Choice 2:** Accounting Related  
9 Credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACCG 160</td>
<td>Payroll Systems and Business Taxes</td>
<td>2</td>
</tr>
<tr>
<td>ACCG 235</td>
<td>Budgeting</td>
<td>2</td>
</tr>
<tr>
<td>ACCG 240</td>
<td>Federal Income Tax I</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 241</td>
<td>Federal Income Tax II</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 280</td>
<td>Governmental Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 290</td>
<td>Auditing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Choice 3:** Quality Related (Choose one subchoice)  
5-8 Credits

**Subchoice 3A**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>QUAL 105</td>
<td>Control Charts and Problem Solving I</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 207</td>
<td>Control Charts and Problem Solving II</td>
<td>4</td>
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</table>

**Subchoice 3B**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>QUAL 121</td>
<td>Introduction to Statistical Process Control</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 206</td>
<td>Statistical Sampling</td>
<td>2</td>
</tr>
</tbody>
</table>

**Minimum Total**  
60

---

**Notes**

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

**Suggested Course Sequence**

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


### Architectural Technology, Computer Graphics Option

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10225 (Effective Fall 1996–Summer 2001)

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 the latest CAD software and the opportunity to work in today's architectural offices. Basic, advanced, and independent study courses are taught using the major computer software systems: AutoCAD, DataCAD, MicroStation, and AES. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

### PREREQUISITES

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

### GENERAL EDUCATION

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

### INFORMATION

Contact the Architectural Studies Center, Gamma Vocational Technical Center, Room 450, telephone number (517) 485-1227.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 22 CREDITS</th>
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<tbody>
<tr>
<td>ARCH 101</td>
<td>Architectural Drafting I 4</td>
</tr>
<tr>
<td>ARCH 102</td>
<td>Architectural Drafting II 4</td>
</tr>
<tr>
<td>ARCH 111</td>
<td>Visual Communication I 3</td>
</tr>
<tr>
<td>ARCH 201</td>
<td>Architectural Drafting III 4</td>
</tr>
<tr>
<td>ARCH 202</td>
<td>Structural Theory 4</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>BOCA/Uniform Code 3</td>
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</table>

### LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 18–50 CREDITS</th>
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<tbody>
<tr>
<td>Complete the indicated number of credits from each CHOICE listed below.</td>
</tr>
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</table>

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

12 Credits

- Writing Core Area 2
- Speech Communication Core Area 3
- Science/Technology Core Area 3
- Global Perspectives and Diversity Core Area 3

#### CHOICE 2: Computer Graphics-Workstation

8 Credits

- ARCH 241 Architectural AEC Computer Graphics I 4
- ARCH 242 Architectural AEC Computer Graphics II 4
- ARCH 245 Architectural AEC Independent Study 2
- ARCH 251 Architectural MicroStation I 4
- ARCH 252 Architectural MicroStation II 4
- ARCH 255 MicroStation Independent Study 2

#### CHOICE 3: Computer Graphics

10-11 Credits

- ARCH 221 Architectural DataCAD I 4
- ARCH 222 Architectural DataCAD II 4
- ARCH 225 Architectural DataCAD Independent Study 2
- ARCH 231 Architectural AutoCAD I 4
- ARCH 232 Architectural AutoCAD II 4
- ARCH 235 Architectural AutoCAD Independent Study 2
- ARCH 237 Architectural Computer Programming 3

#### CHOICE 4: History and Preservation

3 Credits

- ARCH 141 Architectural History I 3
- ARCH 142 Architectural History II 3
- ARCH 146 Preservation and Adaptive Reuse Architecture 3

#### CHOICE 5: Materials, Structures and Systems

7-8 Credits

- ARCH 211 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 6: Mathematics

4 Credits

- MATH 114 Technical Math I 4
- MATH 115 Technical Math II 4
- MATH 121 College Algebra I 4

#### CHOICE 7: Architectural Related (See Note 1)

4 Credits

**MINIMUM TOTAL**

70

### NOTE

1. Allows completion of courses which relate to specific career preparation for the field of architectural computer graphics and have not been applied in any of the above categories.

### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, 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>
<th>ARCH 101</th>
<th>ARCH 102</th>
<th>ARCH 201</th>
<th>BLDT 281</th>
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<tr>
<td>Lim.Ch.</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1996-97 49
ARCHITECTURAL TECHNOLOGY, CORE OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10233 (Effective Fall 1996–Summer 2001)

The Architectural Studies Program offers interested in the field of architecture three degree options. This degree option makes available a comprehensive program of study, involving all aspects of the contemporary architectural profession. Graduates of this comprehensive program are prepared to work as para-professionals in the offices of registered architects, engineers, interior designers, residential designers and builders, component suppliers and manufacturers, assisting those offices with the preparation of design documentation, design work, research, and field supervision. Students within this option area are also prepared to pursue a higher degree in architecture. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<td>ARCH 101</td>
<td>Architectural Drafting I</td>
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<tr>
<td>ARCH 102</td>
<td>Architectural Drafting II</td>
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<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
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<tr>
<td>ARCH 201</td>
<td>Architectural Drafting III</td>
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</tr>
<tr>
<td>ARCH 202</td>
<td>Architectural Drafting IV</td>
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<tr>
<td>ARCH 211</td>
<td>Design Studio I</td>
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<td>ARCH 271</td>
<td>Structural Theory</td>
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<tr>
<td>BLDT 281</td>
<td>BOCA/Uniform Code</td>
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TOTAL: 29 CREDITS

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>12 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
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<tr>
<td>Scientific/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>CHOICE 2: Computer Graphics</th>
<th>7–8 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 221</td>
<td>Architectural DataCAD I</td>
</tr>
<tr>
<td>ARCH 222</td>
<td>Architectural DataCAD II</td>
</tr>
<tr>
<td>ARCH 231</td>
<td>Architectural AutoCAD I</td>
</tr>
<tr>
<td>ARCH 232</td>
<td>Architectural AutoCAD II</td>
</tr>
<tr>
<td>ARCH 237</td>
<td>Architectural Computer Rendering</td>
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<tr>
<td>ARCH 241</td>
<td>Architectural AES Computer Graphics I</td>
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<td>ARCH 242</td>
<td>Architectural AES Computer Graphics II</td>
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<td>ARCH 251</td>
<td>Architectural MicroStation I</td>
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<td>ARCH 252</td>
<td>Architectural MicroStation II</td>
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<table>
<thead>
<tr>
<th>CHOICE 3: Materials, Structures, and Systems</th>
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<tbody>
<tr>
<td>ARCH 273</td>
<td>Environmental Systems</td>
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<td>ARCH 276</td>
<td>Alternative Structures</td>
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<td>ARCH 278</td>
<td>Energy Efficient Design</td>
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<td>ARCH 293</td>
<td>Materials of Construction</td>
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<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
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<table>
<thead>
<tr>
<th>CHOICE 4: History and Preservation</th>
<th>5 Credits</th>
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<tr>
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<td>Architectural History I</td>
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<tr>
<td>ARCH 142</td>
<td>Architectural History II</td>
</tr>
<tr>
<td>ARCH 146</td>
<td>Preservation and Adaptive Reuse Architecture</td>
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<table>
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<th>CHOICE 5: Design</th>
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<tr>
<td>ARCH 128</td>
<td>Residential Planning</td>
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<tr>
<td>ARCH 181</td>
<td>Barrier Free Design</td>
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<td>ARCH 182</td>
<td>Universal Design</td>
</tr>
<tr>
<td>ARCH 212</td>
<td>Design Studio II</td>
</tr>
<tr>
<td>ARCH 213</td>
<td>Facilities Design</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>CHOICE 6: Mathematics</th>
<th>4 Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
</tr>
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<td>MATH 115</td>
<td>Technical Math II</td>
</tr>
<tr>
<td>MATH 121</td>
<td>College Algebra I</td>
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</table>

<table>
<thead>
<tr>
<th>CHOICE 7: Architectural Related (See Note 1)</th>
<th>3–4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM TOTAL</td>
<td>70</td>
</tr>
</tbody>
</table>

NOTE
1. Allows completion of courses which relate to specific career preparation for the field of architecture and have not been applied to 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.

50 ⋅ LANSING COMMUNITY COLLEGE CATALOG 1996-97
### Architectural Technology, Residential Design Option

#### Associate in Applied Science Degree

**Curriculum Code:** 10758 (Effective Fall 1996-Summer 2001)

This degree option will provide architectural students with an opportunity to study all aspects of single and multifamily 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 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 the catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

#### GENERAL EDUCATION

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

#### INFORMATION

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

#### REQUIREMENTS

**TOTAL: 22 CREDITS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 101</td>
<td>Architectural Drafting I</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 102</td>
<td>Architectural Drafting II</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 126</td>
<td>Residential Planning</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 271</td>
<td>Structural Theory</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>BOCA Uniform Code</td>
<td>3</td>
</tr>
<tr>
<td>LAND 132</td>
<td>Residential Landscaping</td>
<td>2</td>
</tr>
</tbody>
</table>

#### LIMITED CHOICE REQUIREMENTS

**TOTAL: 48-54 CREDITS**

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

#### CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

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

**12 Credits**

#### CHOICE 2: Computer Graphics

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>ARCH 221</td>
<td>Architectural DataCAD I</td>
<td>4</td>
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<tr>
<td>ARCH 222</td>
<td>Architectural DataCAD II</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 225</td>
<td>Architectural DataCAD Independent Study</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 231</td>
<td>Architectural AutoCAD I</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 232</td>
<td>Architectural AutoCAD II</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 235</td>
<td>Architectural AutoCAD Independent Study</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 237</td>
<td>Architectural Computer Rendering</td>
<td>3</td>
</tr>
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</table>

**7-8 Credits**

#### CHOICE 3: Building Trades

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 109</td>
<td>Introduction to Construction</td>
<td>3</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
<td>4</td>
</tr>
</tbody>
</table>

**7-8 Credits**

#### CHOICE 4: Materials Structures and Systems

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 273</td>
<td>Environmental Systems</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 276</td>
<td>Alternative Structures</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 278</td>
<td>Energy Efficient Design</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 283</td>
<td>Materials of Construction</td>
<td>4</td>
</tr>
</tbody>
</table>

**7-8 Credits**

#### CHOICE 5: History

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 142</td>
<td>Architectural History II</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 146</td>
<td>Preservation and Adaptive Reuse Architecture</td>
<td>3</td>
</tr>
<tr>
<td>INTR 232</td>
<td>Twentieth Century Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**3 Credits**

#### CHOICE 6: Interior Design

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTR 151</td>
<td>Computer-Aided Kitchen Design</td>
<td>3</td>
</tr>
<tr>
<td>INTR 190</td>
<td>Materials for Interiors</td>
<td>3</td>
</tr>
<tr>
<td>INTR 249</td>
<td>Interior Lighting</td>
<td>3</td>
</tr>
<tr>
<td>INTR 246</td>
<td>Residential Interiors</td>
<td>4</td>
</tr>
</tbody>
</table>

**6-7 Credits**

#### CHOICE 7: Mathematics

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<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>MATH 121</td>
<td>College Algebra I</td>
<td>4</td>
</tr>
</tbody>
</table>

**4 Credits**

#### CHOICE 8: Architectural Related (See Note 1)

**2-4 Credits**

**MINIMUM TOTAL: 70**

#### NOTES

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

#### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>
<th>CODE</th>
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<th>CODE</th>
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<tbody>
<tr>
<td>ARCH 121</td>
<td>ARCH 121</td>
<td>ARCH 121</td>
<td>ARCH 121</td>
<td>BLDT 281</td>
</tr>
<tr>
<td>ARCH 128</td>
<td>LAND 132</td>
<td>ARCH 127</td>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
</tr>
<tr>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
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<tr>
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<tr>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
</tr>
</tbody>
</table>

LANSING COMMUNITY COLLEGE CATALOG 1996-97 51
COMPUTER GRAPHICS ANIMATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10284 (Effective Fall 1996-Summer 2001)

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 tell cartoon features), and in the growing multimedia industry, creating games, training materials, and presentations. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 62 CREDITS</th>
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<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
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<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Drawing II</td>
</tr>
<tr>
<td>ARTS 151</td>
<td>Computer Graphic Art</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography and Layout Indication</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics for Photography</td>
</tr>
<tr>
<td>ARTS 175</td>
<td>Electronic Design I</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
</tr>
<tr>
<td>ARTS 216</td>
<td>Humorous Illustration I</td>
</tr>
<tr>
<td>ARTS 232</td>
<td>Computer Graphics2-D Animation</td>
</tr>
<tr>
<td>ARTS 235</td>
<td>Computer Graphics3-D Animation I</td>
</tr>
<tr>
<td>ARTS 236</td>
<td>Computer Graphics3-D Animation II</td>
</tr>
<tr>
<td>ARTS 269</td>
<td>The Portfolio</td>
</tr>
<tr>
<td>CABG 182</td>
<td>Microsoft Powerpoint/Windows</td>
</tr>
<tr>
<td>CISP 299</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
</tr>
<tr>
<td>IMAG 118</td>
<td>Film Production I</td>
</tr>
<tr>
<td>IMAG 203</td>
<td>Topics in Film Multi-Media</td>
</tr>
<tr>
<td>IMAG 205</td>
<td>Topics in Hybrid Imaging</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 6 CREDITS</th>
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<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
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<tr>
<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
</tr>
<tr>
<td>ARTS 216</td>
<td>Humorous Illustration I</td>
</tr>
<tr>
<td>ARTS 232</td>
<td>Computer Graphics2-D Animation</td>
</tr>
<tr>
<td>ARTS 235</td>
<td>Computer Graphics3-D Animation I</td>
</tr>
<tr>
<td>ARTS 236</td>
<td>Computer Graphics3-D Animation II</td>
</tr>
<tr>
<td>ARTS 269</td>
<td>The Portfolio</td>
</tr>
<tr>
<td>CABG 182</td>
<td>Microsoft Powerpoint/Windows</td>
</tr>
<tr>
<td>CISP 299</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>HUMS 212</td>
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<td>IMAG 118</td>
<td>Film Production I</td>
</tr>
<tr>
<td>IMAG 203</td>
<td>Topics in Film Multi-Media</td>
</tr>
<tr>
<td>IMAG 205</td>
<td>Topics in Hybrid Imaging</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>Core Area</th>
<th>6 Credits</th>
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</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Science/Technology Core Area (See Note 1)</td>
<td>9</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
<td>9</td>
</tr>
</tbody>
</table>

NOTES

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

52 • LANSING COMMUNITY COLLEGE CATALOG 1996–97
**COMPUTER GRAPHICS, MULTIMEDIA ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 19194 (Effective Fall 1996-Summer 2001)

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

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

Contact the Art Program, Academic and Office Facility, Room 399, telephone number (517) 483-1476.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 37 CREDITS</th>
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<tbody>
<tr>
<td>ARTS 131 Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 151 Computer Graphic Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 171 Computer Graphics for Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 232 Computer Graphics/2-D Animation</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 233 Computer Graphics/2-D Interactive</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 234 Computer Graphics/3-D Animation</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 283 The Portfolio</td>
<td>2</td>
</tr>
<tr>
<td>CISR 200 Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 118 Film Production I</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 203 Topics in Film Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 205 Topics in Hybrid Imaging</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 151 Electronic Field Production I</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

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

<table>
<thead>
<tr>
<th>CHOICE 2:</th>
<th>Electronic Design</th>
<th>1 Credit</th>
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<tbody>
<tr>
<td>ARTS 132 Introduction to Quark Xpress</td>
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</tr>
<tr>
<td>ARTS 133 Introduction to PageMaker</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>CHOICE 3:</th>
<th>Basic Photography</th>
<th>2-4 Credits</th>
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<tbody>
<tr>
<td>IMAG 101 Basic Photography for Non Majors</td>
<td>2</td>
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<tr>
<td>IMAG 111 Introduction to Photographic Technology I</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>CHOICE 4:</th>
<th>Business Presentations</th>
<th>3-4 Credits</th>
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<tbody>
<tr>
<td>CISR 256 Multimedia in Business</td>
<td>3</td>
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<tr>
<td>CISR 257 Multimedia Presentations</td>
<td>2</td>
<td></td>
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<tr>
<td>CISR 256 Developing Multimedia Home Pages for the WWW</td>
<td>2</td>
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<tr>
<td>CISR 259 Introduction to Developing Multimedia Training</td>
<td>2</td>
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</table>

**CHOICE 5: Specialty (Choose one subchoice)**

<table>
<thead>
<tr>
<th>Subchoice SA: Art Specialty</th>
<th>15-18 Credits</th>
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</thead>
<tbody>
<tr>
<td>ARTS 102 2-Dimensional Design</td>
<td>3</td>
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<tr>
<td>ARTS 132 Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 137 Drawing II</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 195 Employment and Business Issues for Artists</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 215 Humorous Illustration</td>
<td>4</td>
</tr>
<tr>
<td>CISR 119 Introduction to Windows Programming with Visual Basic</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>Subchoice SB: Photography Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMAG 112 Design Fundamentals for Imaging Technologies</td>
</tr>
<tr>
<td>IMAG 113 Lighting Concepts and Applications</td>
</tr>
<tr>
<td>IMAG 114 Introduction to Photographic Color Technology</td>
</tr>
<tr>
<td>IMAG 121 Imaging Technology</td>
</tr>
<tr>
<td>IMAG 224 Emerging Image Technologies I</td>
</tr>
<tr>
<td>IMAG 233 The Business of Photography: Practices and Directions</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

68

**NOTES**

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

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>Subchoice SA: Art Specialty</th>
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<tbody>
<tr>
<td>ARTS 102</td>
</tr>
<tr>
<td>ARTS 131</td>
</tr>
<tr>
<td>IMAG 118</td>
</tr>
<tr>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>IMAG 224</td>
</tr>
<tr>
<td>IMAG 233</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subchoice SB: Photography Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMAG 112</td>
</tr>
<tr>
<td>IMAG 113</td>
</tr>
<tr>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
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<tr>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
**FINE ART FOUNDATION**

**ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 10721 (Effective Fall 1996-Summer 2001)

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 or experience. Fine artists are self-employed professionals who sell their work through artists' galleries, art fairs, and juried exhibitions. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

Students should see the Course Descriptions section of the catalog of the Class Schedule for course prerequisites and 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 the program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, some students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

**INFORMATION**

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

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TOTAL CREDITS</th>
<th>CREDITS HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>2 Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 103</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 II)</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 146</td>
<td>Printmaking I</td>
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</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
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</table>

**LIMITED CHOICE REQUIREMENTS**

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

**GENERAL EDUCATION Core Areas**

(See the GENERAL EDUCATION section above)

- Writing Core Area
- Spoken Communication Core Area
- Science-Technology Core Area
- Global Perspectives and Diversity Core Area (See Note II)

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**CHOICE 1:** Art

- ARTS 137 | Drawing II | 3 |
- ARTS 141 | Printmaking II | 3 |
- ARTS 146 | Screen Printing II | 3 |
- ARTS 151 | Computer Graphic Art | 3 |
- ARTS 171 | Computer Graphics for Photography | 3 |
- ARTS 195 | Employment and Business Issues for Artists | 2 |
- ARTS 201 | Painting II | 3 |
- ARTS 203 | Figure Painting | 3 |
- ARTS 205 | Watercolor II | 3 |
- ARTS 206 | Advanced Watercolor | 3 |
- ARTS 269 | The Portfolio | 2 |

**MINIMUM TOTAL**

67
### Graphic Design

**Associate in Applied Arts Degree**

**Curriculum Code:** 10219 (Effective Fall 1996–Summer 2001)

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

**General Education**

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

**Information**

Contact the Art Program, Academic and Office Facility, Room 308, telephone number (517) 432-1476.

---

**Requirements**

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**Limited Choice Requirements**

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**Total: 54 Credits**

---

**Suggested Course Sequence**

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

<p>| | | | |</p>
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**Notes**

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

---

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

**Minimum Total:** 63 Credits
ART
1996-1997 Catalog Lansing Community College www.lcc.edu

ILLUSTRATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0285 (Effective Fall 1996–Summer 2001)

An illustrator generally works with a graphic designer, art director, editor, or author to provide pictorial elements called for in visual communication. Illustrators may create a variety of traditional drawing and painting techniques and also employ photography and computer tools. The work of illustrators is found in every visual communication media from printed material to CD-ROM. Creative problem-solving and an understanding of the design process are essential to an illustrator’s success. Illustrators are primarily self-employed professionals or freelance artists working with many organizations. Not all courses in this program transfer
to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

TOTAL: 56 CREDITS

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<td>Watercolor I</td>
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<td>Illustration Black &amp; White</td>
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<td>Illustration Color</td>
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<td>HUMS 212</td>
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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)

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CHOICE 2: Art (Choose 1 Subchoice)

Subchoice 2A

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Subchoice 2B

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<td>ARTS 205</td>
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Subchoice 2C

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Subchoice 2D

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<td>Humorous Illustration I</td>
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<td>Humorous Illustration II</td>
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MINIMUM TOTAL

71 CREDITS

NOTES

1. ARTS 132 must be taken two times for a total of 6 credits.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (i.e., some courses are offered as part time, have prerequisites) should contact an academic advisor or counselor for help with adjustments.

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56 ■ LANSING COMMUNITY COLLEGE CATALOG 1996–97
**AUTO BODY REPAIR**

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10188 (Effective Fall 1996–Summer 2001)

Auto body repair technicians possess the necessary skills to perform collision repair and refinishing according to the manufacturers specifications. Using hand and power tools, they straighten bent frames and body sections, replace badly damaged parts, smooth out minor dents and creases, remove rust, fill small holes, and renew painted surfaces. Auto body repair technicians are employed by collision repair shops, new car dealerships, refinishing businesses, and auto restoration shops. Formal training is highly desirable, because advances in technology in recent years have greatly changed the design, the components, and even the materials used in automobiles. This program does not provide state certification. State certification tests are available at any Michigan Secretary of State Office.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 220, telephone number (517) 483-1338.

**REQUIREMENTS**

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<td>Auto Electrical Theory</td>
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<td>AUTO 150</td>
<td>Automotive Suspension</td>
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<td>AUTO 160</td>
<td>Auto Body Repair</td>
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<td>AUTO 190</td>
<td>Auto Body Welding/Metal Finishing</td>
</tr>
<tr>
<td>AUTO 182</td>
<td>Major Collision Repair</td>
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<tr>
<td>AUTO 184</td>
<td>Unibody and Frame Repair</td>
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<tr>
<td>AUTO 185</td>
<td>Basic Auto Painting</td>
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<td>AUTO 186</td>
<td>Advanced Painting</td>
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<td>Auto Internship</td>
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**LIMITED CHOICE REQUIREMENTS**

| TOTAL: 21 CREDITS |

**CHOICE 1:** General Education Core Areas

12 Credits

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

**CHOICE 2:** Automotive Related

5 Credits

- ENGINE PERFORMANCE/ TUNE-UP
- AUTOMOTIVE COMPUTERS

**CHOICE 3:** Mathematics

4 Credits

- Intermediate Algebra
- Math for Business

**MINIMUM TOTAL**

64

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who in any way are unable to follow the course sequence suggested below (for example, those who are part-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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**AUTO BODY REPAIR**

**CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10188 (Effective Fall 1996–Summer 2001)

This program provides the technical knowledge and skills needed to perform collision repair and refinishing. Students will be prepared for an entry-level position. This program does not provide state certification. State certification tests are available at any Michigan Secretary of State Office.

**REQUIREMENTS**

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<td>Major Collision Repair</td>
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<tr>
<td>AUTO 184</td>
<td>Unibody and Frame Repair</td>
</tr>
<tr>
<td>AUTO 185</td>
<td>Basic Auto Painting</td>
</tr>
<tr>
<td>AUTO 186</td>
<td>Advanced Painting</td>
</tr>
<tr>
<td>AUTO 188</td>
<td>Auto Body Repair and Painting (See Note 1)</td>
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<tr>
<td>MATH 200</td>
<td>Mathematics Principles and Practices</td>
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</table>

**NOTES**

1. AUTO 188 may be repeated for additional credit.

**SUGGESTED COURSE SEQUENCE**

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</tr>
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<td>MATH 050</td>
<td>AUTO 186</td>
<td>AUTO 186</td>
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</table>
AUTOMOTIVE TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10238 (Effective Fall 1996–Summer 2001)

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

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

TOTAL: 44 CREDITS

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<td>AUTO 119</td>
<td>Auto Electrical Theory</td>
<td>5</td>
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<td>AUTO 120</td>
<td>Auto Drive Train</td>
<td>2.5</td>
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<tr>
<td>AUTO 121</td>
<td>Automatic Transmissions</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 122</td>
<td>Advanced Transmission</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 130</td>
<td>Automotive Engines</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 143</td>
<td>Automotive Brakes</td>
<td>2.5</td>
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<td>AUTO 150</td>
<td>Automotive Suspension</td>
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<td>AUTO 160</td>
<td>Auto Air Conditioning</td>
<td>2.5</td>
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<tr>
<td>AUTO 215</td>
<td>Engine Performance Tune-Up</td>
<td>5</td>
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<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>5</td>
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<tr>
<td>AUTO 230</td>
<td>Supplemental Inflatable Restraint/ABS Brake Systems</td>
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<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
<td>3</td>
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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)

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<td>Writing Core Area (See Note 1)</td>
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<td>SCIENCE 100</td>
<td>Speech Communication Core Area</td>
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<td>SCIENCE 101</td>
<td>Science/Technology Core Area</td>
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</tr>
<tr>
<td>HUM 100</td>
<td>Global Perspectives and Diversity Core Area</td>
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CHOICE 2: Automotive Related

<table>
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<th>COURSE TITLE</th>
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</thead>
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<td>AUTO 133</td>
<td>Small Engine Repair</td>
<td>2.5</td>
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<td>AUTO 180</td>
<td>Auto Body Welding/Metal Finishing</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 185</td>
<td>Basic Auto Painting</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 250</td>
<td>Automotive Service Laboratory</td>
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</tr>
<tr>
<td>AUTO 255</td>
<td>Automotive Internship</td>
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<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treatment</td>
<td>4</td>
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</tbody>
</table>

MINIMUM TOTAL: 62

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who, for any reason, are unable to follow the course sequence suggested below (for example, those who are part-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>AUTO 121</td>
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<td>AUTO 119</td>
<td>AUTO 140</td>
<td>AUTO 122</td>
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<tr>
<td>AUTO 130</td>
<td>AUTO 215</td>
<td>AUTO 150</td>
</tr>
<tr>
<td>AUTO 140</td>
<td>Lim.Ch.</td>
<td>AUTO 225</td>
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<tr>
<td>WRT 124</td>
<td>Lim.Ch.</td>
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AUTOMOTIVE TECHNOLOGY

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10440 (Effective Fall 1996–Summer 2001)

The certificate program prepares the individual to take the State of Michigan Mechanics Certification Tests and become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

REQUIREMENTS

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<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<tr>
<td>AUTO 140</td>
<td>Automotive Brakes</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 150</td>
<td>Automotive Suspension</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Air Conditioning</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance Tune-Up</td>
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</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>5</td>
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<tr>
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<td>Automotive Service Laboratory</td>
<td>6</td>
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<tr>
<td>MATH 150</td>
<td>Mathematics Principles and Practices</td>
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MINIMUM TOTAL: 15

SUGGESTED COURSE SEQUENCE

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<tr>
<td>AUTO 250</td>
<td>AUTO 260</td>
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</table>
AIRFRAME MAINTENANCE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10751 (Effective Fall 1996–Summer 2001)

Airframe Maintenance Technicians maintain aircraft in accordance with the Federal Aviation Regulations. Technicians perform inspections, repairs, and alterations to aircraft, and related systems. In addition, they troubleshoot the operation of hydraulic, pneumatic, ice and rain, landing gear, fire protection, fuel, and other associated systems. The maintenance technicians are employed throughout the world maintaining aircraft for major air carriers, commuter airlines, air freight operators, airline 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.

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 Airframe Maintenance Technology Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found in page 9 of this catalog.

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

INFORMATION
The admission and/or graduate requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Lansing Community Technical Center, telephone number (587) 483-1463.

REQUIREMENTS FOR ADMISSION TO THE AIRFRAME MAINTENANCE TECHNOLOGY PROGRAM

Curriculum Code: 10752 (Effective Fall 1996–Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Lansing Community Technical Center.

b. Complete a mandatory advising session with the Airframe Maintenance Technology Program representative, (587) 483-1466.

AIRFRAME MAINTENANCE TECHNOLOGY PROGRAM REQUIREMENTS

Curriculum Code: 10757

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<tr>
<th>COURSE</th>
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<td>AVAF 125</td>
<td>Aircraft Systems I</td>
<td>2</td>
</tr>
<tr>
<td>AVAF 126</td>
<td>Aircraft Systems II</td>
<td>2</td>
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<td>AVAF 127</td>
<td>Aircraft Systems III</td>
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<tr>
<td>AVAF 154</td>
<td>Aircraft Instruments</td>
<td>2</td>
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<td>AVAF 209</td>
<td>Aircraft Structures I</td>
<td>4</td>
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<tr>
<td>AVAF 210</td>
<td>Aircraft Structures II</td>
<td>3</td>
</tr>
<tr>
<td>AVAF 211</td>
<td>Aircraft Electrical I</td>
<td>4</td>
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<td>AVAF 212</td>
<td>Aircraft Electrical II</td>
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<td>AVAF 246</td>
<td>National Aircraft Certification Procedures</td>
<td>1</td>
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<td>AVEL 201</td>
<td>Flight Test Testing</td>
<td>2</td>
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<td>AVGM 114</td>
<td>Aviation General I</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 112</td>
<td>Aviation General II</td>
<td>6</td>
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<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
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<tr>
<td>AVGM 114</td>
<td>Material and Processes</td>
<td>5</td>
</tr>
<tr>
<td>WELD 210</td>
<td>Aircraft Welding</td>
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</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
- Speech Communication Area
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area

MINIMUM TOTAL

10 Credits

NOTES
1. Students must complete each course with a minimum grade of 70 percent and pass Pre-Tests for General and Airframe with a minimum grade of 80 percent to be approved for the Federal Aviation Administration written tests.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>
<td>AVAF 211</td>
<td>Aircraft Structures II</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 Aircraft Certification Procedures</td>
<td>1</td>
</tr>
<tr>
<td>WELD 210</td>
<td>Aircraft Welding</td>
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LANSING COMMUNITY COLLEGE CATALOG 1996-97 59
**AVIATION FLIGHT TECHNOLOGY ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10259 (Effective Fall 1996–Summer 2001)

The commercial flight training program provides all required ground, simulator, and in-flight technical training to meet Federal Aviation Administration requirements for Commercial Pilot Certification. This program will conduct ab initio training (no previous experience) or build on previous experience of the student. Students entering this program are required to accomplish an F.A.A. Class III medical exam prior to entering training. Normal motor skills and academic ability will provide functional competency to support certification. Graduates are initially employed as instructor pilots by flight training schools. As the graduates achieve 1200 to 1500 flight hours, they are competitive for hiring by regional or commuter airlines as First Officers.

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 Aviation Flight Technology Program.

**PRE-REQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational Technical Center, telephone number (517) 483-1264.

**REQUIREMENTS FOR ADMISSION TO THE AVIATION FLIGHT TECHNOLOGY PROGRAM**

Curriculum Code: 10715 (Effective Fall 1996–Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational Technical Center.

b. Complete a mandatory advising session with the Aviation Flight Technology program representative. (517) 483-1406

**AVIATION FLIGHT TECHNOLOGY PROGRAM REQUIREMENTS**

Curriculum Code: 10259

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<td>AVFT 201</td>
<td>Flight Training I</td>
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<td>Flight Training II</td>
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<tr>
<td>AVFT 203</td>
<td>Flight Training III</td>
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<tr>
<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 121</td>
<td>Aviation Meteorology</td>
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<td>AVGS 211</td>
<td>Instrument Pilot Ground School</td>
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<tr>
<td>AVGS 221</td>
<td>Commercial Pilot Ground School</td>
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<td>AVPF 185</td>
<td>Preventive Maintenance</td>
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<td>AVST 211</td>
<td>Flight Simulator I</td>
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<td>AVST 212</td>
<td>Flight Simulator II</td>
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<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**

**TOTAL: 15 CREDITS**

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

**CHOICE 1: General Education Core Areas 12 Credits**

(See the GENERAL EDUCATION section above)

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

**CHOICE 2: Advanced Flight Training 3 Credits**

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<td>AVFT 206</td>
<td>Flight Instructor Instrument Flight Training</td>
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<td>AVFT 207</td>
<td>Multi-Engine Flight Training</td>
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<td>Multi-Engine Instructor Flight Training</td>
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<td>AVFT 224</td>
<td>Tail Wheel Transition</td>
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<tr>
<td>AVFT 230</td>
<td>Turbine Aircraft</td>
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<tr>
<td>AVGS 222</td>
<td>Flight Instructor Ground School</td>
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</tr>
<tr>
<td>AVST 215</td>
<td>Multi-Engine Flight Simulator</td>
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**MINIMUM TOTAL**

**50**

**SUGGESTED COURSE SEQUENCE**

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

<table>
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<th>IV</th>
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<td>AVGS 101</td>
<td>AVGS 211</td>
<td>AVGS 221</td>
<td>AVFT 204</td>
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<td>AVFT 201</td>
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**Lim.Ch.**

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AVIONICS
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10259 (Effective Fall 1996-Summer 2000)

Avionics (aviation) is the application of electronics to aviation. Avionics technicians install and service complex communication, navigation, radar, and autopilot equipment. The avionics work environment is clean, well-lighted, and temperature-controlled. Students will find employment opportunities at airlines, airports, electronics manufacturers, and government agencies. LCC Avionics students can qualify for several industry training certificates from Allied Signal Aerospace. In addition, LCC offers on-site testing for the General Radiotelephone Operator License. Although students do not need any special skills to start the Avionics Program, they should be aware that color blindness may cause them difficulty because various electronic components are color-coded.

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 Avionics Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Scheduler for course prerequisite information. Basic skills assessments and advising information may be found on page 6 of this catalog.

GENERAL EDUCATION
General education requirements will be in effect for the Avionics Associate Degree Program beginning in fall of 1997. All candidates who are admitted to the Avionics Associate Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements, which will be included in the associate degree requirements. For additional information about general education requirements, see page 22.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE AVIONICS PROGRAM
Curriculum Code: 10717 (Effective Fall 1996-Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational Technical Center.

b. Successfully complete MATH 054 or Placement Exam.

c. Successfully complete READ 115 or computerized placement test for reading.

d. Complete a mandatory advising session with the Avionics program representative, (517) 483-1406.

AVIONICS PROGRAM REQUIREMENTS
Curriculum Code: 10259

<table>
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<td>AVAF 208 Aircraft Structures I</td>
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<td>AVEL 130 Avionics Installations</td>
<td>3</td>
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<tr>
<td>AVEL 150 Avionics Test Generation</td>
<td>2</td>
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<tr>
<td>AVEL 151 Avionics Test Generation Lab</td>
<td>2</td>
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<tr>
<td>AVEL 190 Receiver Troubleshooting</td>
<td>2</td>
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<td>AVEL 191 Receiver Troubleshooting Lab</td>
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<td>AVEL 200 Flight Line Testing</td>
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<td>AVEL 220 Avionics Systems I</td>
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<td>AVEL 221 Avionics Systems I Lab</td>
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<tr>
<td>AVEL 224 Avionics Regulation</td>
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<td>AVEL 230 Avionics Systems II</td>
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</tr>
<tr>
<td>AVEL 231 Avionics Systems II Lab</td>
<td>4</td>
</tr>
<tr>
<td>AVR 140 Avionics Instruments I</td>
<td>3</td>
</tr>
</tbody>
</table>

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

CHOICE 1: Aviation Electronics
AVEL 205 International Avionics Systems | 2 Credits |
AVEL 207 Avionics Systems | 2 Credits |
AVEL 296 Advanced Avionics Laboratory | 2 Credits |

CHOICE 2: Political Science
POLS 100 American Political System | 4 Credits |
POLS 121 State and Local Government | 4 Credits |

MINIMUM TOTAL
79 Credits

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. AVEL courses are to be completed successfully in sequence and are prerequisites for subsequent semesters. 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.

LANSING COMMUNITY COLLEGE CATALOG 1996-97 61
POWERPLANT MAINTENANCE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10745 (Effective Fall 1996–Summer 2001)

Powerplant Maintenance Technicians maintain aircraft in accordance with the Federal Aviation Regulations. Technicians perform inspections, repairs, and alterations to aircraft powerplants, propellers, and their related systems. In addition, they troubleshoot the operation of induction, cooling, exhaust, fuel metering, ignition, electrical, starting, lubrication, propeller, and other associated systems. Powerplant maintenance technicians are employed throughout the world maintaining aircraft for major air carriers, commuter airlines, air freight operators, corporate flight departments, fixed base operators, and a variety of other specialized aviation businesses. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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 Powerplant Maintenance Technology Program.

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

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

INFORMATION
The admission and/or graduate requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE POWERPLANT MAINTENANCE TECHNOLOGY PROGRAM

Curriculum Code: 10751 (Effective Fall 1996–Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational-Technical Center.

b. Complete a mandatory advising session with the Powerplant Maintenance Technology program representative, (517) 483-1406.

POWERPLANT MAINTENANCE TECHNOLOGY PROGRAM REQUIREMENTS

Curriculum Code: 10745

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>CODE</td>
<td>CREDIT HOURS</td>
</tr>
<tr>
<td>AVAF 212 Aircraft Electrical I</td>
<td>4</td>
</tr>
<tr>
<td>AVCM 111 Aviation General I</td>
<td>4</td>
</tr>
<tr>
<td>AVCM 112 Aviation General II</td>
<td>4</td>
</tr>
<tr>
<td>AVCM 113 Aviation General III</td>
<td>4</td>
</tr>
<tr>
<td>AVCM 114 Material and Processes</td>
<td>5</td>
</tr>
<tr>
<td>AVPP 251 Reciprocating Engine Systems</td>
<td>2</td>
</tr>
<tr>
<td>AVPP 253 Reciprocating Ignition Systems</td>
<td>5</td>
</tr>
<tr>
<td>AVPP 255 Reciprocating Induction Systems</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 257 Aircraft Propeller Systems</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 259 Turbine Engine I</td>
<td>4</td>
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<tr>
<td>AVPP 261 Turbine Engine II</td>
<td>4</td>
</tr>
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<td>AVPP 263 Turbine Engine Systems</td>
<td>2</td>
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<tr>
<td>AVPP 265 Powerplant Instruments</td>
<td>2</td>
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<tr>
<td>AVPP 267 National Powerplant Certification Procedures</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 the GENERAL EDUCATION section above)

<table>
<thead>
<tr>
<th>Core Area</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
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</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>5</td>
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</tbody>
</table>

**MINIMUM TOTAL**

71

NOTES

1. Students must complete each course with a minimum grade of 70 percent and pass Pre-Tests for General and Powerplant with a minimum grade of 80 percent to be approved for the Federal Aviation Administration written test.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>AVCM 111</td>
<td>AVAF 212</td>
<td>AVPP 253</td>
<td>AVPP 261</td>
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<td>AVCM 112</td>
<td>AVPP 241</td>
<td>AVPP 255</td>
<td>AVPP 263</td>
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<td>AVCM 113</td>
<td>AVPP 251</td>
<td>AVPP 257</td>
<td>AVPP 265</td>
</tr>
<tr>
<td>AVCM 114</td>
<td>Lin Ch</td>
<td>AVPP 259</td>
<td>AVPP 267</td>
</tr>
</tbody>
</table>

Lin Ch
BANKING MANAGEMENT, AIB DIPLOMA PROGRAM
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10138 (Effective Fall 1996 – Summer 2001)

A bank manager is responsible for the smooth, profitable, and efficient functioning of their financial institution. Bank managers must have detailed knowledge of industries affected by banking—such as insurance, real estate, and securities—and broad knowledge of business and industrial activities. Skills in the areas of communication, accounting, legal aspects, human relations, and finance are those required to succeed in a banking career. Graduates of this program are prepared to work in a variety of banks and other financial institutions. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 4 of this catalog.

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 31 CREDITS</th>
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<tr>
<td>Course</td>
<td>Hours</td>
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<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>ABL 101</td>
<td>Principles of Banking</td>
</tr>
<tr>
<td>ABL 206</td>
<td>Money and Banking</td>
</tr>
<tr>
<td>BUSN 115</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>CSIB 200</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>MGMT 223</td>
<td>Supervision</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
</tr>
<tr>
<td>MKTG 201</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 30-31 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>Course</td>
<td>Hours</td>
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</tbody>
</table>

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

CHOICE 1: General Education Core Areas (See Note 1) 3 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area 6
Speech Communication Core Area 0
Science/Technology Core Area 0
Global Perspectives and Diversity Core Area 0

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

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

CHOICE 4: Economics 3 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABL 120</td>
<td>Economics for Bankers</td>
</tr>
<tr>
<td>ECON 140</td>
<td>Current Economic Issues</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics - Micro</td>
</tr>
</tbody>
</table>

CHOICE 5: Business/Management Related (See Note 4) 6-7 Credits

MINIMUM TOTAL 61

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Choose courses with an ABL prefix that are not already used to meet degree requirements. REAL 275 may also be chosen.
3. Choose CABS prefix and or CSIB prefix courses of 100 or above. A maximum of 2 credits total of CABS 100 - Seminar Special Subject may be used for this choice.
4. Choose courses with a prefix of BUSN and or MGMT not already used to meet degree requirements. Up to 3 credits total from the ECON-S Series may be used (MGMT 249 through MGMT 270). ACGG 211 and or ECON 240 may also be chosen to fulfill this requirement.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABL 101</td>
<td>ACGG 210</td>
<td>ABL 206</td>
<td>MGMT 234</td>
</tr>
<tr>
<td>BUSN 115</td>
<td>CSIB 200</td>
<td>MGMT 223</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>MKTG 200</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
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</table>

BANKING MANAGEMENT, AIB DIPLOMA PROGRAM
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10126 (Effective Fall 1996 – Summer 2001)

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

REQUIREMENTS

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<th>REQUIREMENTS</th>
<th>TOTAL: 16 CREDITS</th>
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<tr>
<td>Course</td>
<td>Hours</td>
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<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>ABL 101</td>
<td>Principles of Banking</td>
</tr>
<tr>
<td>BUSN 115</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>MGMT 223</td>
<td>Supervision</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Principles of Marketing</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 11 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>Course</td>
<td>Hours</td>
</tr>
</tbody>
</table>

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

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

CHOICE 2: Economics 3 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABL 120</td>
<td>Economics for Bankers</td>
</tr>
<tr>
<td>ECON 140</td>
<td>Current Economic Issues</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics - Micro</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 30

NOTES
1. Choose courses with an ABL prefix that are not already used to meet certificate requirements.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>ABL 161</th>
<th>ACGG 210</th>
<th>BUSN 115</th>
<th>MGMT 223</th>
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<tbody>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
BUILDING MAINTENANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10211 (Effective Fall 1996–Summer 2001)

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 groundskeeping. They should also be versatile enough to do routine painting, drywall, plastering, woodworking, pool and lawn maintenance, as well as some custodial work. Building maintenance workers can either be self-employed or work for apartment complexes, hospitals, office complexes, hotels, schools, commercial buildings, or restaurants.

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

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 220, telephone number (517) 493-1396.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE CODE</th>
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<tr>
<td>BLDR 101</td>
<td>Basic Woodworking</td>
<td>2</td>
</tr>
<tr>
<td>BLDR 123</td>
<td>Basic Painting and Decorating</td>
<td>3</td>
</tr>
<tr>
<td>BLDR 132</td>
<td>General Home Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
<td>4</td>
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<tr>
<td>BLDT 128</td>
<td>Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>ELTE 109</td>
<td>Electrical Safety Practices</td>
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<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation (See Note)</td>
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<tr>
<td>HORT 195</td>
<td>Pests and Problems of Ornamental Plants</td>
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<tr>
<td>HVAC 100</td>
<td>Fundamentals of Heating, Ventilating and Air Conditioning</td>
<td>3</td>
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<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
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<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
<td>2</td>
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<tr>
<td>HVAC 120</td>
<td>Heating I</td>
<td>4</td>
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<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
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<tr>
<td>HVAC 220</td>
<td>Heating II</td>
<td>4</td>
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<tr>
<td>HVAC 221</td>
<td>Introduction to Hydraulics</td>
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<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
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<tr>
<td>LAND 133</td>
<td>Residential Landscape Maintenance</td>
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<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
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TOTAL: 53 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>BLDR 101</td>
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<td>BLDR 132</td>
<td>General Home Maintenance</td>
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<tr>
<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
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<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation (See Note)</td>
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<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
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<td>Refrigeration I</td>
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<tr>
<td>MATH 114</td>
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TOTAL: 4 CREDITS

MINIMUM TOTAL: 57 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>TITLE</th>
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<tbody>
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<td>Basic Woodworking</td>
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<tr>
<td>BLDR 123</td>
<td>Basic Painting and Decorating</td>
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<tr>
<td>ELTE 112</td>
<td>Technical Math I</td>
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<tr>
<td>HVAC 100</td>
<td>Applied Electricity I</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Heating I</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
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<td>HVAC 220</td>
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<tr>
<td>HVAC 240</td>
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</tr>
<tr>
<td>LAND 133</td>
<td>Residential Landscape Maintenance</td>
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</tbody>
</table>

MINIMUM TOTAL: 32 CREDITS

BUILDING MAINTENANCE
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10237 (Effective Fall 1996–Summer 2001)

This program consists of practical hands-on courses that provide students with the necessary technical knowledge and skills needed for an entry-level position in the maintenance of residential and commercial buildings.

<table>
<thead>
<tr>
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<th>TITLE</th>
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<tbody>
<tr>
<td>BLDR 101</td>
<td>Basic Woodworking</td>
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<td>BLDR 132</td>
<td>General Home Maintenance</td>
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<tr>
<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
<td>1</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation (See Note)</td>
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</tr>
<tr>
<td>HVAC 100</td>
<td>Fundamentals of Heating, Ventilating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
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<tr>
<td>HVAC 120</td>
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<td>Refrigeration I</td>
<td>4</td>
</tr>
<tr>
<td>LAND 133</td>
<td>Residential Landscape Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL: 32 CREDITS

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDR 101</td>
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<tr>
<td>ELTE 100</td>
<td>12 Credits</td>
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<tr>
<td>HVAC 100</td>
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</tr>
<tr>
<td>HVAC 110</td>
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</tbody>
</table>

MINIMUM TOTAL: 36 CREDITS

NOTES

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>BLDR 101</td>
<td>Basic Woodworking</td>
<td>2</td>
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<tr>
<td>BLDR 123</td>
<td>Basic Painting and Decorating</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 100</td>
<td>Applied Electricity I</td>
<td>2</td>
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<tr>
<td>HVAC 110</td>
<td>Heating I</td>
<td>4</td>
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<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 220</td>
<td>Heating II</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
<td>4</td>
</tr>
<tr>
<td>LAND 133</td>
<td>Residential Landscape Maintenance</td>
<td>3</td>
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</table>

MINIMUM TOTAL: 32 CREDITS

64  LANSING COMMUNITY COLLEGE CATALOG 1996-97
BUSINESS ADMINISTRATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10243 (Effective Fall 1996–Summer 2001)

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 jobs in positions. Additional education will enhance an individual's employment and advancement opportunities. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

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

REQUIRED COURSES

<table>
<thead>
<tr>
<th>CODE</th>
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<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>BUSN 201</td>
<td>Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics - Micro</td>
<td>3</td>
</tr>
<tr>
<td>ECON 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
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<tr>
<td>MGMT 202</td>
<td>Creative Thinking for Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td>MGMT 230</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 230</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 20–25 CREDITS</th>
</tr>
</thead>
</table>

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

CHOICE 1: General Education Core Areas (See Note 1) 0 Credits
(See the GENERAL EDUCATION section above)

WRITING Core Area
SPEECH Communication Core Area
SCIENCE/TECHNOLOGY Core Area
GLOBAL PERSPECTIVES and DIVERSITY Core Area

CHOICE 2: 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) 3–4 Credits

CHOICE 5: Business Related 7–9 Credits

ACCG 211 | Principles of Accounting II | 4 |
ACCG 212 | Principles of Economics - Macro | 3 |
ACCG 213 | Economic/Business History of the U.S. | 3 |
ACCG 214 | International Economics | 3 |
LABR 200 | Introduction to Labor Relations | 3 |
LABR 204 | Employment Law for Managers | 3 |
LEGL 216 | Business Law II, Commercial Law | 3 |
LEGL 217 | Business Law III, Business Organizations | 3 |

MINIMUM TOTAL 61

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these core areas.
2. Choose courses with a MGMT prefix that are not already used to meet degree requirements. Up to 3 credits total from the T.I.M.E. Series may be used (MGMT 240–249, MGMT 270). BUSN 239 may also be used.
3. Choose courses with a MKTG prefix that are not already used to meet degree requirements. BUSN 239 and/or BUSN 250 may also be used.
4. Choose CABS-prefix courses of 110 or above.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence below (for example, those who are part-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>BUSN 118</td>
<td>ECON 201</td>
<td>ACGG 210</td>
<td>LEGL 215</td>
</tr>
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<td>CSIS 200</td>
<td>MGMT 234</td>
<td>BUSN 201</td>
<td>MGMT 200</td>
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<tr>
<td>MATH 117</td>
<td>MKTG 200</td>
<td>MGMT 225</td>
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<td>WRIT 115</td>
<td>Lim Ch</td>
<td>SFCH 110</td>
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<tr>
<td>Lim Ch</td>
<td>Lim Ch</td>
<td>Lim Ch</td>
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</tbody>
</table>

LANSING COMMUNITY COLLEGE CATALOG 1996-97
INTERNATIONAL BUSINESS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10240 (Effective Fall 1996–Summer 2001)

International business managers plan, organize, and control projects from start to finish for businesses and organizations with international connections. They help their company achieve its goals in differing cultural and governmental situations. Graduates of this program may work for a variety of organizations and businesses, both in this hemisphere and overseas. Knowledge of a foreign language and a technical or business specialty increases one's employability. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

Contact the Business Careers Department, Old Central Building, Rooms 210, tele-
phone number (517) 483-1522.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ACGG 101</td>
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<tr>
<td>BUSN 111</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 115</td>
<td>Marketing and Managing Your Professional 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 Communication in the Workplace</td>
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</tr>
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<td>WRIT 115</td>
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MINIMUM TOTAL

<table>
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<tr>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
</tr>
</tbody>
</table>

NOTES

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

SUGGESTED COURSE SEQUENCE

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

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<td>CISB 100</td>
<td>Introduction to Computer Information Systems</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
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<tr>
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<td>MKTG 200</td>
<td>Principles of Marketing</td>
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<tr>
<td>SPCH 110</td>
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<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
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</table>

66 » LANSING COMMUNITY COLLEGE CATALOG 1996-97
### CIVIL TECHNOLOGY

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10170  (Effective Fall 1996–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, and surveying, and must be computer literate. Civil engineering technicians work for construction, engineering, and architecture firms, government agencies, mapping agencies, and private petroleum and mining companies.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

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

### REQUIREMENTS

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>CHEM 135</td>
<td>Chemistry in Society</td>
<td>4</td>
</tr>
<tr>
<td>CIVIL 101</td>
<td>Civil Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CIVIL 120</td>
<td>Surveying</td>
<td>4</td>
</tr>
<tr>
<td>CIVIL 124</td>
<td>Route Survey</td>
<td>4</td>
</tr>
<tr>
<td>CIVIL 131</td>
<td>Traffic Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVIL 132</td>
<td>Construction Materials</td>
<td>3</td>
</tr>
<tr>
<td>CIVIL 135</td>
<td>Soil Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVIL 136</td>
<td>Hydrology and Highway Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVIL 200</td>
<td>Civil Mathematics</td>
<td>5</td>
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<tr>
<td>CIVIL 241</td>
<td>Statics and Strength of Materials</td>
<td>3</td>
</tr>
<tr>
<td>CRET 253</td>
<td>MicroStation Beginning</td>
<td>3</td>
</tr>
<tr>
<td>SOC 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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</tbody>
</table>

**TOTAL: 52 CREDITS**

### LIMITED CHOICE REQUIREMENTS

|                  | TOTAL: 11–13 CREDITS |

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

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

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

#### CHOICE 2: Mathematics

- MATH 114: Technical Math I: 4 credits
- MATH 126: College Algebra and Trigonometry: 5 credits

#### CHOICE 3: Physical Science

- PHYS 206: Applied Physics: 4 credits
- PHYS 215: Physics I: 5 credits

#### MINIMUM TOTAL

63 credits

---

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students who are interested in practical field experience may apply for the Student Civil Technician Co-op Program. Contact the Technology Careers Department at 483-1336.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>
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<tr>
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<td>CIVIL 101</td>
<td>CHEM 135</td>
<td>CIVIL 131</td>
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<td>SPCH 120</td>
<td>CIVIL 124</td>
<td>CRET 253</td>
<td>CIVIL 132</td>
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<td>Lim Ch 1</td>
<td>CIVIL 135</td>
<td>SOCL 120</td>
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<td>Lim Ch 2</td>
<td>CIVIL 200</td>
<td>Lim Ch 3</td>
<td>CIVIL 241</td>
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LANSING COMMUNITY COLLEGE CATALOG 1996-97  67
COMPUTER SECURITY AND CONTROLS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10253 (Effective Fall 1996-Summer 2001)

Computer auditors plan and conduct audits of data processing systems and applications to safeguard assets, ensure accuracy of data, and promote operational efficiency. They may interview workers and examine records to gather data by following an audit plan and using the computer. They analyze data gathered to evaluate effectiveness of controls and determine accuracy of reports and efficiency and security of operations. They devise, write, and test computer programs necessary to obtain information needed for audit. They devise controls for new or modified computer applications to prevent inaccurate calculations and data loss, and to ensure discovery of errors.

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

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

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 216, telephone number (517) 483-1522.

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
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<tr>
<td>ACCG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 230</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 120</td>
<td>Introduction to Programming and Logic Using BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 125</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 170</td>
<td>COBOL I</td>
<td>4</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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</tr>
<tr>
<td>CISB 201</td>
<td>Information Systems Auditing</td>
<td>3</td>
</tr>
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<td>CISB 240</td>
<td>Operating Systems</td>
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<tr>
<td>CISB 256</td>
<td>Database Concepts</td>
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<tr>
<td>CISB 258</td>
<td>Systems Analysis and Design</td>
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<tr>
<td>CISB 270</td>
<td>COBOL II</td>
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TOTAL: 52 CREDITS

LIMITED CHOICE REQUIREMENTS

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

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

MINIMUM TOTAL: 61 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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<td>ACCG 221</td>
<td>Intermediate Accounting II</td>
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<td>CISB 125</td>
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<td>3</td>
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<td>CISB 200</td>
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<tr>
<td>CISB 201</td>
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<td>CISB 240</td>
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<td>CISB 256</td>
<td>Database Concepts</td>
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</tr>
<tr>
<td>CISB 258</td>
<td>Systems Analysis and Design</td>
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</tr>
<tr>
<td>CISB 270</td>
<td>COBOL II</td>
<td>3</td>
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</table>

68 • LANSING COMMUNITY COLLEGE CATALOG 1996-97
ELECTRONICS TECHNOLOGY, COMPUTER TECHNICIAN
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10743 (Effective Fall 1996-Summer 2001)

A computer service technician is highly knowledgeable in both computer hardware and software. This person must not only understand the operation of the computer system, but must also diagnose and repair the system when it fails, make upgrades and perform preventive maintenance. A computer service technician also answers customers' questions relating to correct use of computers or components and may install new equipment. A successful computer service technician must understand electronics, computer hardware and software, and how they work together to make the computer operate. Computer service technicians are employed in computer sales and service shops and any place a large number of computers are found. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 220, telephone number (517) 433-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
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<td>2</td>
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<td>CISB 107</td>
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<td>CISB 231</td>
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<tr>
<td>ELCT 151</td>
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<tr>
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<td>Logic Problems Analysis I</td>
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</tr>
<tr>
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<tr>
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<tr>
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<tr>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

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<th>TITLE</th>
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<tr>
<td>CABS 195</td>
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<td>2</td>
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<td>CISB 107</td>
<td>DOS Management</td>
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<td>CISB 120</td>
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<td>1</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 240</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 100</td>
<td>Schematic Drawing</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 120</td>
<td>Programming Preparation</td>
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<td>ELCT 151</td>
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<td>ELCT 160</td>
<td>Logic Problems Analysis I</td>
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<td>ELCT 180</td>
<td>Computer Test Equipment I</td>
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<td>ELCT 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>WRT 124</td>
<td>Technical Writing</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 2: Communication

<table>
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<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>CABS 195</td>
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</tr>
<tr>
<td>CISB 107</td>
<td>DOS Management</td>
<td>1</td>
</tr>
<tr>
<td>CISB 120</td>
<td>Introduction to Programming and Logic Using Basic</td>
<td>1</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 240</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 100</td>
<td>Schematic Drawing</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 120</td>
<td>Programming Preparation</td>
<td>2</td>
</tr>
<tr>
<td>ELCT 151</td>
<td>Computer Troubleshooting I</td>
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<tr>
<td>ELCT 160</td>
<td>Logic Problems Analysis I</td>
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<td>WRT 124</td>
<td>Technical Writing</td>
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</table>

SUGGESTED COURSE SEQUENCE

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students interested in specializing in microcomputer software support should review the curriculum guide for Microcomputer Support Specialist, #10713.

SUGGESTED COURSE SEQUENCE

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

COMPUTER REPAIR TECHNICIAN
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10168 (Effective Fall 1996-Summer 2001)

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.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ELCT 100</td>
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<td>ELCT 161</td>
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<tr>
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<tr>
<td>WRT 117</td>
<td>Writing Preparation</td>
<td>4</td>
</tr>
<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Software

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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
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</tr>
<tr>
<td>CISB 107</td>
<td>DOS Management</td>
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</tr>
<tr>
<td>CISB 120</td>
<td>Introduction to Programming and Logic Using Basic</td>
<td>1</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
</tr>
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<td>CISB 240</td>
<td>Operating Systems</td>
<td>3</td>
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<tr>
<td>ELCT 100</td>
<td>Schematic Drawing</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 120</td>
<td>Programming Preparation</td>
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<tr>
<td>ELCT 151</td>
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<td>Logic Problems Analysis I</td>
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<td>ELCT 161</td>
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<tr>
<td>WRT 117</td>
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<td>4</td>
</tr>
<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
<td>3</td>
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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.
## MICROCOMPUTER SUPPORT SPECIALIST
### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10713 (Effective Fall 1996-Summer 2001)

Microcomputer support specialists install, modify, and make minor repairs to microcomputer hardware and software systems and provide technical assistance and training to system users. They install or assist service personnel in installation of hardware and peripheral components, such as monitors, keyboards, printers, and disk drives on user's premises. They may also load software packages into the computer, instruct users in use of equipment, software, and manuals; answer clients' inquiries concerning the system's operation; and diagnose system hardware, software, and operator problems.

**PREREQUISITES**

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

## GENERAL EDUCATION

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

## INFORMATION

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

### REQUIREMENTS

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**LIMITED CHOICE REQUIREMENTS**

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

### CHOICE 1: General Education Core Areas

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<td>CABS 121</td>
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<td>CABS 180</td>
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### CHOICE 3: Spreadsheets

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### CHOICE 4: Databases

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### CHOICE 5: Graphics

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### CHOICE 6: Computer Related

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**MINIMUM TOTAL**

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**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for the Core area.
2. For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CABS and CISB prefix.

**SUGGESTED COURSE SEQUENCE**

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

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MICROCOMPUTER SYSTEMS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10111 (Effective Fall 1996-Summer 2001)

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

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

CODE   TITLE   CREDITS
ACCG 210  Principles of Accounting I   4
CABS 110  Microsoft Office   3
CABS 195  Microsoft Windows   2
CISB 190  Introduction to Computer Information Systems   3
CISB 194  Introduction to DOS   1
CISB 196  Data Communications   3
CISB 200  Information Systems Technology and Problem Solving   3
CISB 250  Introduction to Local Area Networks   3
CISB 240  Operating Systems   3
CISB 253  Database Concepts   3
CISB 260  Systems Analysis and Design   4

LIMITED CHOICE REQUIREMENTS

Total: 28-30 Credits

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

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

Total: 9 Credits

CHOICE 2: Programming Track (Choose 1 Subchoice)

Subchoice A: Object Oriented Programming Track

CISB 119  Introduction to Windows Programming With Visual BASIC   4
CISB 122  Advanced Windows Programming With Visual BASIC   3
CISB 281  Visual C++ Programming   3

Total: 10-11 Credits

Subchoice B: Procedural Programming Track

CISB 120  Introduction to Programming and Logic Using BASIC   4
CISB 160  C Programming With Business Application   3
CISB 269  C++ Language with QPP   4

Total: 7 Credits

CHOICE 3: Computer Specialty Area

CABS 133  Microsoft Access Database   2
CABS 135  FilePro Database - For Windows   3
CISB 192  Introduction to the Internet in Business   1
CISB 197  DOS Management   1
CISB 211  Advanced Local Area Networks   3
CISB 235  Microcomputer Hardware Support   3
CISB 236  Microcomputer Software Support   3

Total: 7 Credits

CHOICE 4: Computer Related

CISB 245  Programming Internship   3
CISB 247  Microcomputer Project   2

Total: 5 Credits

MINIMUM TOTAL   30

NOTES

1. Students completing REQUIREMENTS have fulfilled requirements for the Core area.
2. For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CISB prefix.

SUGGESTED COURSE SEQUENCE

ACCG 210  CISB 110  CISB 230  CISB 250
CABS 110  CISB 195  CISB 260  CISB 250
CABS 195  CISB 130  Lim Ch 1  Lim Ch 1
CISB 240  Lim Ch 2  Lim Ch 2  Lim Ch 3
CISB 241  Lim Ch 3  Lim Ch 3  Lim Ch 4

MICROCOMPUTER SYSTEMS
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 16107 (Effective Fall 1996-Summer 2001)

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

REQUIREMENTS

CODE   TITLE   CREDITS
CABS 110  Microsoft Office   3
CABS 195  Microsoft Windows   2
CISB 100  Introduction to Computer Information Systems   2
CISB 104  Introduction to DOS   1
CISB 120  Data Communications   3

Total: 12 Credits

LIMITED CHOICE REQUIREMENTS

Total: 18-19 Credits

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

CHOICE 1: Programming Introduction

CISB 119  Introduction to Windows Programming With Visual BASIC   4
CISB 120  Introduction to Programming and Logic Using BASIC   4

Total: 8 Credits

CHOICE 2: Computer Related

CABS 133  Microsoft Access Database   2
CABS 135  FilePro Database - For Windows   3
CISB 192  Introduction to the Internet in Business   1
CISB 197  DOS Management   1
CISB 211  Advanced Local Area Networks   3
CISB 235  Microcomputer Hardware Support   3
CISB 236  Microcomputer Software Support   3
CISB 240  Operating Systems   3

Total: 3 Credits

CHOICE 3: Writing

WRIT 115  Business Communications   3
WRIT 121  Composition I   4
WRIT 124  Technical Writing   3

Total: 3-4 Credits

CHOICE 4: Speech Communication

SPCH 109  Oral Communication in the Workplace   3
SPCH 120  Dynamics of Communication   3

Total: 6 Credits

MINIMUM TOTAL   30

NOTES

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

SUGGESTED COURSE SEQUENCE

CISB 100  CISB 110  CISB 230  CISB 250
CISB 195  CISB 130  Lim Ch 1  Lim Ch 1
CISB 240  Lim Ch 2  Lim Ch 2  Lim Ch 3
CISB 241  Lim Ch 3  Lim Ch 3  Lim Ch 4

LANSING COMMUNITY COLLEGE CATALOG 1996-97 © 71
**PROGRAMMER/ANALYST ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10113 (Effective Fall 1996–Summer 2001)

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

**INFORMATION**

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

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<td>3</td>
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<tr>
<td>CISB 120 Introduction to Programming and Logic Using BASIC</td>
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<tr>
<td>CISB 130 Data Communications</td>
<td>3</td>
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<td>CISB 170 COBOL I</td>
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<td>CISB 200 Information Systems Technology and Problem Solving</td>
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<td>CISB 240 Operating Systems</td>
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<td>CISB 250 Database Concepts</td>
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<tr>
<td>CISB 260 Systems Analysis and Design</td>
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<tr>
<td>CISB 261 Systems Implementation with CASE Tools</td>
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<td>CISB 270 COBOL II</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  9 Credits
(See the GENERAL EDUCATION section above)
- Writing Core Area: 3
- Speech Communication Core Area: 3
- Science Technology Core Area (See Note 1): 3
- Global Perspectives and Diversity Core Area: 3

**CHOICE 2:** Additional Language (Choose 1 Subchoice)  7 Credits
Subchoice 2A: 5 Credits
- CISB 175 Beginning RPG on the AS/400: 3
- CISB 275 Advanced RPG on the AS/400: 4

Subchoice 2B: 2 Credits
- CISB 180 C Programming with Business Application: 3
- CISB 280 C++ Language with OOP: 4

**CHOICE 3:** Computer Related (See Note 2)  7 Credits
- CABS 110 Microsoft Office: 3
- CABS 130 SQL: Structured Query Language: 2
- CABS 195 MicroSoft Windows: 2
- CISB 200 Introduction to Local Area Networks: 3
- GIBS 245 Programming Internship: 3

**MINIMUM TOTAL**  60

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NOTES

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

**SUGGESTED COURSE SEQUENCE**

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

Certificate of Completion

Curriculum Code: 10785 (Effective Fall 1996-Summer 2001)

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

PREREQUISITES

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

INFORMATION

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

REQUIREMENTS

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<tr>
<td>CABS 119</td>
<td>Word for Windows</td>
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<tr>
<td>CABS 126</td>
<td>Excel</td>
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<tr>
<td>CABS 129</td>
<td>Excel - Advanced</td>
<td>2</td>
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<td>CABS 123</td>
<td>Microsoft Access</td>
<td>2</td>
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<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
<td>2</td>
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<td>CABS 233</td>
<td>Advanced Microsoft Access</td>
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MINIMUM TOTAL: 16 CREDITS

SUGGESTED COURSE SEQUENCE

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

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<td>CABS 119</td>
<td>CABS 126</td>
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<td>CABS 219</td>
</tr>
<tr>
<td>CABS 123</td>
<td>CABS 233</td>
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</table>

MICROCOMPUTER USER SUPPORT SPECIALIST

Certificate of Completion

Curriculum Code: 10796 (Effective Fall 1996-Summer 2001)

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

PREREQUISITES

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

INFORMATION

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

REQUIREMENTS

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<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
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<td>CISB 107</td>
<td>DOS Management</td>
<td>1</td>
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<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
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<tr>
<td>CISB 230</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
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<tr>
<td>CISB 231</td>
<td>Advanced Local Area Networks</td>
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<td>CISB 233</td>
<td>Microcomputer Hardware Support</td>
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<td>CISB 236</td>
<td>Microcomputer Software Support</td>
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MINIMUM TOTAL: 18 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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<td>CISB 231</td>
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<td>CISB 236</td>
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<td>CISB 235</td>
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### SYSTEM SUPPORT SPECIALIST FOR THE AS/400
#### CERTIFICATE OF COMPLETION

Curriculum Code: 10754 (Effective Fall 1996–Summer 2001)

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

**PREREQUISITES**

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

**INFORMATION**

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 16 CREDITS</th>
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<td>CODE</td>
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<tr>
<td>CISB 175</td>
<td>Beginning RPG on the AS/400</td>
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<tr>
<td>CISB 177</td>
<td>AS/400 Operations</td>
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<tr>
<td>CISB 271</td>
<td>COBOL/400: Implementing COBOL on the AS/400</td>
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<tr>
<td>CISB 273</td>
<td>Advanced RPG on the AS/400</td>
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<tr>
<td>CISB 282</td>
<td>C4900: Implementing the C Language on the AS/400</td>
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**MINIMUM TOTAL**: 16 CREDITS

**SUGGESTED COURSE SEQUENCE**

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

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<td>CISB 271</td>
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### WINDOWS PROGRAMMING SPECIALIST
#### CERTIFICATE OF COMPLETION

Curriculum Code: 10763 (Effective Fall 1996–Summer 2001)

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

**PREREQUISITES**

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

**INFORMATION**

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

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<th>REQUIREMENTS</th>
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<td>CABS 107</td>
<td>DOS Management</td>
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<td>CABS 119</td>
<td>Introduction to Windows Programming with Visual BASIC</td>
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<td>CABS 122</td>
<td>Advanced Windows Programming with Visual BASIC</td>
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<td>CABS 281</td>
<td>Visual C++ Programming</td>
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**LIMITED CHOICE REQUIREMENTS**

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<td>CABS 167</td>
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**MINIMUM TOTAL**: 15 CREDITS

**SUGGESTED COURSE SEQUENCE**

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

<p>| | | |</p>
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<td>CABS 195</td>
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<td>CABS 281</td>
</tr>
<tr>
<td>CABS 167</td>
<td>Lim. Ch.</td>
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</table>
RESIDENTIAL BUILDING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10167 (Effective Fall 1996–Summer 2001)

This program prepares an individual to build single family structures and multiple housing buildings such as apartments and condominiums. A residential builder must have basic math skills, understand construction methods and techniques, and know the proper use of construction materials. They must also have significant knowledge of blueprint reading, estimating, code requirements, and small business administration and management. Students will be prepared to obtain a Residential Builder's License or a Maintenance and Alteration Contractor's License. This program also assists students in preparing for the Michigan Builder's License Exam which is administered by the National Assessment Institute and the State of Michigan. This program does not lead to journey status.

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

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

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

REQUIREMENTS

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<td>ARCH 283   Materials of Construction</td>
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<tr>
<td>BLDT 100   Introduction to Construction</td>
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<tr>
<td>BLDT 105   Structural Print Reading</td>
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<tr>
<td>BLDT 121   Residential Framing and Foundations</td>
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<td>BLDT 124   Framing and Siding</td>
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<tr>
<td>BLDT 126   Interior Carpentry</td>
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<tr>
<td>BLDT 262   Builders Business License</td>
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<td>BLDT 277   Construction Cost Estimating</td>
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<td>BLDT 281   BOCA/Uniform Code</td>
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<td>CIGB 200   Information Systems Technology and Problem Solving</td>
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<td>CIVL 115   Survey Fieldwork</td>
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<td>MATH 112   Intermediate Algebra</td>
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LIMITED CHOICE REQUIREMENTS

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<td>Oral Communication Core Area</td>
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<td>Science/Technology Core Area (See Note 1)</td>
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<td>Global Perspectives and Diversity Core Area</td>
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<tr>
<td>CHOICE 2: Building/Business Related</td>
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<td>ACCG 190  Practical Accounting for Non-Majors</td>
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<td>ARCH 278  Energy Efficient Design</td>
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<td>BLDR 101  Basic Woodworking</td>
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<td>BLDT 298  Builders Business License Review</td>
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<td>BUSN 318  Introduction to Business</td>
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MINIMUM TOTAL: 55

SUGGESTED COURSE SEQUENCE

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

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<td>MATH 105</td>
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<td>MATH 112</td>
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RESIDENTIAL BUILDING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10335 (Effective Fall 1996–Summer 2001)

This certificate consists of practical hands-on courses that prepare an individual for the job market within one year of training. This program does not lead to journey status.

REQUIREMENTS

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<td>BLDT 100     Introduction to Construction</td>
<td>3</td>
</tr>
<tr>
<td>BLDT 105     Structural Print Reading</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 121     Residential Framing and Foundations</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 126     Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 277     Construction Cost Estimating</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 281     BOCA/Uniform Code</td>
<td>3</td>
</tr>
<tr>
<td>MATH 050     Mathematics-Principles and Practices</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 30

SUGGESTED COURSE SEQUENCE

1. BLDT 100
2. ARCH 283
3. BLDT 105
4. BLDT 121
5. BLDT 126
6. BLDT 277
7. MATH 050
8. BLDT 281

NOTES

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

LANSING COMMUNITY COLLEGE CATALOG 1996–97 75
COURT AND CONFERENCE REPORTING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10273 (Effective Fall 1996–Summer 2000)

Reporters are communication specialists who use a steno machine to make a verbatim record of legal proceedings and produce an accurate transcript of what was said. They can also be realtime reporters and/or captioners, providing instant translation for deaf or hard-of-hearing persons. Court reporters work in all environments where a verbatim record is needed or voice-to-text translation is required for communication access. Official reporters work in the courtroom. Freelance reporters work in a freelance firm or home office. Realtime reporters work in a courtroom or conference setting. Captioners work at a television station. State certification is required and national certification is highly recommended. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Court and Conference Reporting Program.

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

GENERAL EDUCATION
General education requirements will be in effect for the Court and Conference Reporting Associate in Business Degree Program beginning in fall of 1997. All candidates who are admitted to the Court and Conference Reporting Associate in Business Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements, which will be included in the associate degree requirements. For additional information about general education requirements, see page 22.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 222, Lansing Community College, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE COURT AND CONFERENCE REPORTING PROGRAM

Curriculum Code: 10270 (Effective Fall 1996–Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 222, Lansing Community College.

b. National Court Reporters Association (NCRA) approval of this program requires graduation from an accredited high school or successfully complete General Education Development (GED) Examination with an average score of 55 and no score below 35.

c. Applicants must have typing experience of 40 words per minute. Successful completion of typing exam administered by the program.

d. Mandatory advising session with program representative.

e. Comptuerized placement test for reading. Level 3 minimum required.

COURT AND CONFERENCE REPORTING PROGRAM

Curriculum Code: 10273

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 69.5 CREDITS</th>
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<tbody>
<tr>
<td>CODE</td>
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</tr>
<tr>
<td>CACR 100</td>
<td>Machine Shorthand Theory</td>
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<tr>
<td>CACR 110</td>
<td>Machine Shorthand Speedbuilding I</td>
</tr>
<tr>
<td>CACR 120</td>
<td>Machine Shorthand Speedbuilding II</td>
</tr>
<tr>
<td>CACR 130</td>
<td>WordPerfect for Court Reporters</td>
</tr>
<tr>
<td>CACR 140</td>
<td>English for Court Reporters</td>
</tr>
<tr>
<td>CACR 201</td>
<td>Q and A I</td>
</tr>
<tr>
<td>CACR 202</td>
<td>Q and A II</td>
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<td>CACR 203</td>
<td>Q and A III</td>
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<tr>
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<td>Jury Charge I</td>
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<td>CACR 211</td>
<td>Jury Charge II</td>
</tr>
<tr>
<td>CACR 212</td>
<td>Jury Charge III</td>
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<tr>
<td>CACR 220</td>
<td>Literary I</td>
</tr>
<tr>
<td>CACR 221</td>
<td>Literary II</td>
</tr>
<tr>
<td>CACR 222</td>
<td>Literary III</td>
</tr>
<tr>
<td>CACR 230</td>
<td>Medical/Technical Testimony I</td>
</tr>
<tr>
<td>CACR 231</td>
<td>Medical/Technical Testimony II</td>
</tr>
<tr>
<td>CACR 232</td>
<td>Medical/Technical Testimony III</td>
</tr>
<tr>
<td>CACR 240</td>
<td>C.A.T.</td>
</tr>
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<td>CACR 250</td>
<td>Court Procedures and Fieldwork</td>
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<tr>
<td>CACR 270</td>
<td>Realtime Reporting</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
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<tr>
<td>OADM 197</td>
<td>Medical Vocabulary</td>
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<td>OADM 206</td>
<td>Legal Vocabulary and Forms Preparation</td>
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<tr>
<td>SOC 120</td>
<td>Introduction to Sociology</td>
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<tr>
<td>WRIT 114</td>
<td>Business English</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

Total: 4 CREDITS

Table of indicated credits from each choice listed below.

CHOICE 1: Government

- POLS 120 American Political System | 4 Credits
- POLS 121 State and Local Government | 4 Credits

MINIMUM TOTAL

- 73.5 Credits

NOTES

1. 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 this program. Students are responsible for obtaining their own equipment upon completion of the program.

2. Students must complete the Associate Degree Program and attain the following minimum speeds for graduation: 230 wpm Testimony, 200 wpm Jury Charge, 190 wpm Literary, and 180 wpm Medical Testimony. In addition, completing 200 verified hours of actual writing in CACR 256 fieldwork and type a minimum of 60 net words per minute.

3. This curriculum meets all of the National Court Reporters Association Board on Approved Student Education (BASE) minimum standards for receiving a degree in Court and Conference Reporting.

4. A 3.0 grade or better is required to advance to the next related CACR 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>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
</tr>
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<tbody>
<tr>
<td>CACR 100</td>
<td>CACR 110</td>
<td>CACR 120</td>
<td>CACR 201</td>
</tr>
<tr>
<td>CACR 130</td>
<td>OADM 206</td>
<td>LEGL 215</td>
<td>CACR 210</td>
</tr>
<tr>
<td>CACR 140</td>
<td>SOC 120</td>
<td>OADM 197</td>
<td>CACR 220</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>CACR 240</td>
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<table>
<thead>
<tr>
<th>Semester 5</th>
<th>Semester 6</th>
<th>Semester 7</th>
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<tbody>
<tr>
<td>CACR 232</td>
<td>CACR 231</td>
<td>CACR 232</td>
</tr>
<tr>
<td>CACR 270</td>
<td>CACR 250</td>
<td>CACR 250</td>
</tr>
<tr>
<td>CACR 250</td>
<td>CACR 250</td>
<td>CACR 250</td>
</tr>
</tbody>
</table>
### CREDIT UNION MANAGEMENT ASSOCIATE IN BUSINESS DEGREE

**Curriculum Code: 10103 (Effective Fall 1996-Summer 2001)**

A credit union manager is responsible for the smooth and efficient functioning of the organization and is responsible to the members of that credit union. Handling money and confidential information, credit union managers make decisions in accordance with policy set by the institution's board of directors and federal and state laws and regulations. Graduates of this program are prepared to work in various types and sizes of credit unions and other financial institutions.

**PREREQUISITES**
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, same students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

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

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>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>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 102</td>
<td>Credit Union Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 100</td>
<td>Introduction to Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 200</td>
<td>Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 201</td>
<td>Credit Union Financial Counseling</td>
<td>2</td>
</tr>
<tr>
<td>CUMA 215</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224</td>
<td>Diversity in the Workplace: A Domestic and Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 209</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 118</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

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

| Writing Core Area                              | 0 |
| Speech Communication Core Area                | 0 |
| Science/Technology Core Area                  | 0 |
| Global Perspectives and Diversity Core Area   | 0 |

**CHOICE 2:** Management Related **18-19 Credits**

| ACCG 211 | Principles of Accounting II         | 4 |
| BUSN 201 | International Business              | 3 |
| BUSN 256 | Personal Finance                    | 3 |
| ECON 201 | Principles of Economics - Micro     | 3 |
| ECON 202 | Principles of Economics - Macro     | 3 |
| INSU 265 | Principles of Risk and Insurance    | 3 |
| LABR 200 | Introduction to Labor Relations     | 3 |
| LABR 204 | Employment Law for Managers         | 3 |
| MATH 117 | Math for Business                   | 4 |
| MGMT 224 | Human Resource Management           | 3 |
| MGMT 225 | Organizational Behavior             | 3 |
| MGMT 237 | Introduction to Total Quality Management | 3 |
| MGMT 239 | Titre and Stress Management         | 3 |
| MGMT 304 | Organizational Development          | 3 |

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

| MINIMUM TOTAL | 61 |

**NOTES**
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Choose CABS- prefix and/or CISB- prefix courses of 160 or above. A maximum of 2 credits total of CABS 160 - Seminar Special Subject may be used 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.

| BUSN 118 | CUMA 200 | ACCG 210 | CISB 200 |
| CUMA 100 | CUMA 201 | CUMA 102 | MGMT 225 |
| SPCH 118 | MKTG 200 | CUMA 215 | CUMA 224 |
| WRT 115  | Lim.Ch.  | Lim.Ch.  | Lim.Ch.  |
| Lim.Ch.  | Lim.Ch.  | Lim.Ch.  | Lim.Ch.  |

### CREDIT UNION MANAGEMENT CERTIFICATE OF COMPLETION

**Curriculum Code: 10151 (Effective Fall 1996-Summer 2001)**

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>
<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUMA 102</td>
<td>Credit Union Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 100</td>
<td>Introduction to 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 201</td>
<td>Credit Union Financial Counseling</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 215</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:** Communication **3 Credits**

| MKTG 209 | Principles of Marketing             | 3 |
| SPCH 118 | Oral Communication in the Workplace | 3 |
| WRT 115  | Business Communications              | 3 |

**MINIMUM TOTAL**

| 20 |

**SUGGESTED COURSE SEQUENCE**

| CUMA 102  | CUMA 200 |
| CUMA 100  | CUMA 201 |
| CUMA 215  | MGMT 225 |
| Lim.Ch.   | Lim.Ch.  |
CRIMINAL JUSTICE

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10170 (Effective Fall 1996–Summer 2001)

This degree program prepares an individual for a career as a probation and parole officer, corrections officer, halfway house administrator, jail corrections officer, private correctional professional, or local corrections position. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, some students may need a necessary 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

TOTAL: 46 CREDITS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAES 102</td>
<td>2</td>
</tr>
<tr>
<td>CJUS 101</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 133</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 134</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 245</td>
<td>2</td>
</tr>
<tr>
<td>LBL 160</td>
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<td>PSYC 200</td>
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<tr>
<td>SOCL 120</td>
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<tr>
<td>SPHT 120</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
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Vocational Certificate Requirements (See Note 1)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>3</td>
</tr>
<tr>
<td>CJUS 135</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 250</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 255</td>
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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)

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

CHOICE 2: Related Professional Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJUS 102</td>
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<tr>
<td>CJUS 106</td>
<td>3</td>
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<tr>
<td>CJUS 129</td>
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<td>CJUS 205</td>
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</tr>
<tr>
<td>SOCL 255</td>
<td>3</td>
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<tr>
<td>SOCL 256</td>
<td>3</td>
</tr>
<tr>
<td>SOCL 261</td>
<td>3</td>
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</tbody>
</table>

MINIMUM TOTAL

61 CREDITS

NOTES

1. Completion of these five courses with a minimum 2.0 grade in each class will result in receiving the Michigan Corrections Officer Vocational Certificate. These courses are certified by the Michigan Corrections Officer Training Counsel.

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CJUS 101</td>
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<tr>
<td>CJUS 121</td>
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<tr>
<td>CJUS 255</td>
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</tr>
<tr>
<td>LEGL 160</td>
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<tr>
<td>PSYC 200</td>
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<td>SOCL 120</td>
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<td>SPOH 120</td>
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<td>WRIT 121</td>
<td>4</td>
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</table>

Lansing Ch 2

78 • LANSING COMMUNITY COLLEGE CATALOG 1996-97
**CRIMINAL JUSTICE, LAW ENFORCEMENT**  
**ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10257 (Effective Fall 1996-Summer 2001)  
This degree program prepares an individual for a career as a law enforcement officer. It also prepares the individual for possible entry to the Police Academy Program. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

**INFORMATION**  
Contact the Criminal Justice and Law Center, Old Central Building, Room 224, telephone number (517) 483-1570.

**REQUIREMENTS**(206,606),(788,887)

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<td>CJUS 101</td>
<td>Introduction to Criminal Justice</td>
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<tr>
<td>CJUS 102</td>
<td>Crime Causes and Conditions</td>
<td>3</td>
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<tr>
<td>CJUS 103</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 106</td>
<td>Juvenile Problems: Control and Prevention I</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 133</td>
<td>Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 201</td>
<td>Criminal Justice Organization and Administration</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 203</td>
<td>Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 205</td>
<td>Policing Into the 21st Century</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 255</td>
<td>Human Relations in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 150</td>
<td>Critical Thinking in Law</td>
<td>3</td>
</tr>
<tr>
<td>SOC 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>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
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</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**  
Total: 20-23 Credits  
Complete the indicated number of credit from each choice listed below.

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

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

**CHOICE 2:** Law Enforcement (Choose 1 Subchoice)  
17-25 Credits

<table>
<thead>
<tr>
<th>Subchoice 1A: Mid-Michigan Police Academy Requirements</th>
<th>25 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJUS 200</td>
<td>Criminal Investigation and Procedures</td>
</tr>
<tr>
<td>CJUS 201</td>
<td>Michigan Criminal Law and Procedure</td>
</tr>
<tr>
<td>CJUS 202</td>
<td>Patrol Procedures and Tactics</td>
</tr>
<tr>
<td>CJUS 205</td>
<td>Standard First Aid</td>
</tr>
<tr>
<td>CJUS 206</td>
<td>Report Writing in Law Enforcement</td>
</tr>
<tr>
<td>CJUS 207</td>
<td>Highway Traffic Operations</td>
</tr>
<tr>
<td>CJUS 208</td>
<td>Basic Police Science</td>
</tr>
<tr>
<td>CJUS 209</td>
<td>Law Enforcement Physical Training</td>
</tr>
<tr>
<td>CJUS 210</td>
<td>Precision Driving</td>
</tr>
<tr>
<td>PFFT 103</td>
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</table>

**Subchoice 1B: Other Law Enforcement**  
17 Credits

| CJUS 107 | Juvenile Problems: Control and Prevention II | 3 |
| CJUS 204 | Criminal Investigation | 4 |
| PSYC 206 | Introduction to Psychology | 4 |
| PSYC 208 | Abnormal Psychology | 3 |
| SOC 255 | Contemporary Social Problems | 3 |

**MINIMUM TOTAL**  
61

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

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

**Subchoice 1A: Mid-Michigan Police Academy**

<table>
<thead>
<tr>
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<tr>
<td>CJUS 101</td>
<td>CJUS 105</td>
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</tr>
<tr>
<td>CJUS 102</td>
<td>CJUS 201</td>
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<td>CJUS 208</td>
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<td>LEGL 150</td>
<td>CJUS 205</td>
<td>CJUS 203</td>
<td>PSYC 206</td>
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<tr>
<td>WRIT 121</td>
<td>CJUS 255</td>
<td>SOC 120</td>
<td>SPCH 120</td>
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**Subchoice 1B: Other Law Enforcement**

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<tr>
<td>WRIT 121</td>
<td>CJUS 255</td>
<td>SOC 120</td>
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</table>

**Police Academy**
MID-MICHIGAN POLICE ACADEMY
CERTIFICATE OF COMPLETION

Curriculum Code: 10737 (Effective Fall 1996-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 850 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 are completed in a single semester.

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

INFORMATION
Contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Room 129B Old Central Building, telephone number (517) 493-5248.

REQUIREMENTS FOR ADMISSION TO THE MID-MICHIGAN POLICE ACADEMY PROGRAM

Curriculum Code: 10736 (Effective Fall 1996-Summer 1997)

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

a. A minimum of 37 semester total credits (POLS 120 or POLS 121 must be taken by applicants without an Associate Degree or higher);

b. Have a minimum GPA of 2.0;

c. Meet minimum standards of employment for the State of Michigan as defined in Public Act 303;

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

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

g. Mid-Michigan Police Academy must receive two official transcripts of colleges attended;

h. Must take (LCC) Computerized Placement Test.

MID-MICHIGAN POLICE ACADEMY PROGRAM REQUIREMENTS

Curriculum Code: 10737

<table>
<thead>
<tr>
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<tr>
<td>CODE</td>
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<tr>
<td>CJUS 260</td>
<td>Criminal Investigation and Procedures 3</td>
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<tr>
<td>CJUS 261</td>
<td>Michigan Criminal Law and Procedure 3</td>
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<tr>
<td>CJUS 262</td>
<td>Patrol Procedures and Tactics 3</td>
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<td>CJUS 263</td>
<td>Standard First Aid 2</td>
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<td>CJUS 264</td>
<td>Report Writing in Law Enforcement 1</td>
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<td>CJUS 265</td>
<td>Highway Traffic Operations 3</td>
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<td>CJUS 266</td>
<td>Basic Police Science 3</td>
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<td>Law Enforcement Physical Training 2</td>
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</table>

MINIMUM TOTAL 25
CAD/CAM ENGINEERING TECHNICIAN
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10128 (Effective Fall 1996-Summer 2001)

This curriculum is intended for those students planning to pursue an advanced degree in the engineering field. While striving for that goal, students often seek employment as computer-aided design (CAD) operators. A CAD operator is an integral part of all decision-making environments, making a CAD operator an integral part of all decisions made in developing a finished product. Responsibilities include graphically representing, either manually or electronically, the information received from an engineering design work team. CAD operators are employed by engineering and consulting firms, the automotive industry, manufacturers of special machinery, etc. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

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

REQUIREMENTS

<table>
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<tr>
<th>COURSE</th>
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<tr>
<td>CHEM 151</td>
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<tr>
<td>CHEM 161</td>
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<tr>
<td>CPSC 150</td>
<td>FORTRAN</td>
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<td>DTDS 101</td>
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<td>DTDS 102</td>
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<td>DTDS 103</td>
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<td>2</td>
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<td>DTDS 104</td>
<td>Descriptive Geometry</td>
<td>4</td>
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<tr>
<td>MATH 151</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>MATH 152</td>
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<tr>
<td>MATH 253</td>
<td>Calculus III</td>
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<tr>
<td>PHYS 215</td>
<td>Physics I: Mechanics</td>
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<tr>
<td>PHYS 216</td>
<td>Physics II: Electromagnetism, Waves, and Optics</td>
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<tr>
<td>PHYS 225</td>
<td>Physics I Laboratory</td>
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</tr>
<tr>
<td>PHYS 226</td>
<td>Physics II Laboratory</td>
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</tbody>
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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
(See the GENERAL EDUCATION section above)

- Writing Core Area
  - 3 Credits

- Speech Communication Core Area
  - 3 Credits

- Science Technology Core Area (See Note 1)
  - 0 Credits

- Global Perspectives and Diversity Core Area
  - 3 Credits

9 Credits

CHOICE 2: Computer Graphics (See Note 2)

12 Credits

Subchoice 1:
- DTDS 131 AutoCAD Basic 2-D
  - 4 Credits

- DTDS 132 AutoCAD Advanced
  - 4 Credits

- DTDS 233 AutoCAD 3-D and Solids
  - 4 Credits

Subchoice 2:
- DTDS 130 Unigraphics I
  - 4 Credits

- DTDS 131 Unigraphics II
  - 4 Credits

- DTDS 132 Unigraphics III
  - 4 Credits

MINIMUM TOTAL

67 Credits

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

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

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tr>
<td>CHEM 151</td>
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</tr>
<tr>
<td>CHEM 161</td>
<td>AutoCAD Advanced</td>
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</tr>
<tr>
<td>DTDS 233</td>
<td>AutoCAD 3-D and Solids</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 130</td>
<td>Unigraphics I</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 131</td>
<td>Unigraphics II</td>
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<tr>
<td>DTDS 132</td>
<td>Unigraphics III</td>
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LANSING COMMUNITY COLLEGE CATALOG 1996-'97 81
### Drafting and Design Associate in Applied Science Degree

**Curriculum Code:** 10145 (Effective Fall 1996–Summer 2001)

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-aided design programs, sketching and illustration, and specification interpretation. Proficiency in the use of current computer-aided design packages, up-to-date geometric tolerancing techniques, and descriptive geometry applications is necessary to succeed in the industrial workplace. Employment possibilities include engineering firms, consulting firms, the automotive industry, manufacturers of special machinery, tool and die industry, etc.

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

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

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

### Requirements

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<tr>
<th>REQUIREMENTS</th>
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<td>CODE/TITLE</td>
<td>CREDIT HOURS</td>
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<tr>
<td>CNCP 191 PC Applications for Technology</td>
<td>3</td>
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<tr>
<td>CNCP 195 Basic Machining Processes</td>
<td>3</td>
</tr>
<tr>
<td>DTDS 101 Drafting I</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 102 Drafting II</td>
<td>4</td>
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<tr>
<td>DTDS 103 Geometric Tolerancing</td>
<td>2</td>
</tr>
<tr>
<td>DTDS 104 Descriptive Geometry</td>
<td>4</td>
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<tr>
<td>DTDS 204 Jigs and Fixture Design</td>
<td>4</td>
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<tr>
<td>MACH 100 Manufacturing Processes</td>
<td>4</td>
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<tr>
<td>MACH 135 Metallurgy and Heat Treat</td>
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<tr>
<td>MATH 114 Technical Math I</td>
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**Limited Choice Requirements**

<table>
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<tr>
<th>LIMITED CHOICE REQUIREMENTS</th>
<th>TOTAL: 24 CREDITS</th>
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<tbody>
<tr>
<td>Complete the indicated number of credits from each OPTION listed below.</td>
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</table>

#### 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

#### Choice 2:
- Computer Graphics (See Note 1) 12 Credits
  - DTDS 131 AutoCAD Basic 2-D 4
  - DTDS 132 AutoCAD Advanced 4
  - DTDS 233 AutoCAD 3-D and Solids 4

#### Subchoice 1:
  - DTDS 180 Unigraphics I 4
  - DTDS 181 Unigraphics II 4
  - DTDS 182 Unigraphics III 4

**Minimum Total:** 64

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

**Suggested Course Sequence**

<table>
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<tr>
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<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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<tr>
<td>MATH 114</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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</table>

**Drafting and Design Certificate of Achievement**

**Curriculum Code:** 10145 (Effective Fall 1996–Summer 2001)

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.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 25 CREDITS</th>
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<tr>
<td>CODE/TITLE</td>
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<td>CNCP 101 PC Applications for Technology</td>
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<td>DTDS 102 Drafting II</td>
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<td>DTDS 103 Geometric Tolerancing</td>
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<tr>
<td>DTDS 104 Descriptive Geometry</td>
<td>4</td>
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<td>MACH 100 Manufacturing Processes</td>
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<td>MATH 114 Technical Math I</td>
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### Limited Choice Requirements

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<td>Complete the indicated number of credits from each CHOICE listed below.</td>
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</table>

#### Choice 1:
- Computer Graphics (See Note 1) 12 Credits

#### Subchoice 1:
  - DTDS 131 AutoCAD Basic 2-D 4
  - DTDS 132 AutoCAD Advanced 4
  - DTDS 233 AutoCAD 3-D and Solids 4

#### Subchoice 2:
  - DTDS 180 Unigraphics I 4
  - DTDS 181 Unigraphics II 4
  - DTDS 182 Unigraphics III 4

**Minimum Total:** 37

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

**Suggested Course Sequence**

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<tr>
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ELECTRICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10134 (Effective Fall 1996–Summer 2001)

Students in this program may select either the construction specialty or the machine control and maintenance specialty. Construction electricians install electrical wiring and systems in homes, offices, stores, or industrial plants. Machine control designers are responsible for designing control circuits which operate machinery in plants. Maintenance electricians work in industry maintaining and troubleshooting power and control circuits on machinery. Both specialties require mechanical aptitude, logical thinking, and problem-solving skills. Employment opportunities vary with each specialty.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

Contact the Technology Careers Department, Garden, Vocational Technical Center, Room 220. Telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 33 CREDITS

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<td>ELTE 110</td>
<td>Practical Electricity</td>
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<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation</td>
<td>2</td>
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<tr>
<td>ELTE 121</td>
<td>Analyzing Electric Circuits</td>
<td>5</td>
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<tr>
<td>ELTE 122</td>
<td>Motors and Transformers</td>
<td>4</td>
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<tr>
<td>ELTE 131</td>
<td>Introduction to Machine Control</td>
<td>4</td>
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<tr>
<td>ELTE 145</td>
<td>Electrical Prints for Buildings</td>
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<td>ELTE 150</td>
<td>Electric Motor Maintenance</td>
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<td>ELTE 260</td>
<td>Introduction to Programmable Logic Controllers</td>
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<tr>
<td>INAU 100</td>
<td>Introduction to Industrial Automation</td>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 34 CREDITS

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

Writing Core Area

Speech Communication Core Area

Science/Technology Core Area

Global Perspectives and Diversity Core Area

12 Credits

CHOICE 2: Electrical Specialization (Choose 1 Subchoice)

22 Credits

Subchoice 2A: Construction Specialization

BLDT 101 Structural Blueprint Reading

BLDT 277 Construction Cost Estimating

ELTE 141 National Electrical Code I

ELTE 142 National Electrical Code II

ELTE 240 Electrical Estimating

HVAC 100 Fundamentals of Heating, Ventilating, and Air Conditioning

Subchoice 2B: Machine Control and Maintenance Specialization

ELTE 122 Industrial Control Electronics

ELTE 232 Industrial Control Design

ELTE 261 Allen-Bradley PLC-5 Advanced

INAU 200 Applied Automation

MFGM 101 Industrial Hydraulics

MINIMUM TOTAL: 57

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 to help with adjustments.

Construction Specialty

<table>
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<th>I</th>
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<tr>
<td>ELTE 100</td>
<td>ELTE 112</td>
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<tr>
<td>Lim.Ch.</td>
<td>ELTE 150</td>
<td>ELTE 260</td>
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ELECTRICAL TECHNOLOGY, CONSTRUCTION CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10759 (Effective Fall 1996–Summer 2001)

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.

REQUIREMENTS

TOTAL: 42 CREDITS

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<thead>
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<td>ELTE 110</td>
<td>Practical Electricity</td>
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<td>Introduction to Machine Control</td>
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<td>ELTE 260</td>
<td>Introduction to Programmable Logic Controllers</td>
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<tr>
<td>INAU 100</td>
<td>Introduction to Industrial Automation</td>
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MINIMUM TOTAL: 42

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 to help with adjustments.

Construction Specialty

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<td>Lim.Ch.</td>
<td>ELTE 150</td>
<td>ELTE 260</td>
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ELECTRICAL TECHNOLOGY, CONTROL AND MAINTENANCE CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10760 (Effective Fall 1996–Summer 2001)

This Certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing machine control electrician.

REQUIREMENTS

TOTAL: 46 CREDITS

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<td>ELTE 121</td>
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<td>ELTE 150</td>
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MINIMUM TOTAL: 46

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 to help with adjustments.

Construction Specialty

<table>
<thead>
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ELECTRONICS TECHNOLOGY, BIOMEDICAL OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10136 (Effective Fall 1996–Summer 2001)

Biomedical electronics technicians inspect, maintain, repair, calibrate, and modify electronic, electrical, mechanical, hydraulic, and pneumatic equipment and instruments used in medical therapy, diagnosis, and research. They may also be involved in the operation and/or supervision of biomedical equipment and in equipment control. Second year students complete an internship in a biomedical electronics repair facility under the supervision of a biomedical electronics technician. Biomedical electronics technicians are employed by hospitals, biomedical equipment manufacturers, and independent biomedical service facilities. Not all courses in this program transfer to all colleges. Students planning to transfer should seek an academic advisor or counselor before enrolling in any course.

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

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

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

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<td>Digital Basics</td>
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<td>ELCT 151</td>
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<td>ELCT 211</td>
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<td>ELCT 212</td>
<td>Linear Circuits II</td>
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<td>Advanced Digital Electronics</td>
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<td>ELCT 241</td>
<td>Analog Troubleshooting</td>
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<tr>
<td>ELCT 251</td>
<td>Digital Troubleshooting I</td>
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<td>ELCT 295</td>
<td>Biomedical Instrumentation</td>
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<td>ELCT 296</td>
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<td>SPCM 110</td>
<td>Oral Communications in the Workplace</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

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

MINIMUM TOTAL 65

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 here (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

| ELCT 100 | GISB 200 | ANAT 145 | ELCT 212 |
| ELCT 101 | ELCT 112 | ELCT 211 | ELCT 261 |
| ELCT 102 | ELCT 130 | ELCT 213 | ELCT 290 |
| ELCT 110 | ELCT 131 | ELCT 241 | Lim.Ch. |
| ELCT 120 | WRIT 124 | ELCT 251 | ELCT 261 |
| ELCT 151 | ELCT 281 | ELCT 281 | ELCT 281 |

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ELECTRONICS TECHNOLOGY, COMMUNICATIONS OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10155 (Effective Fall 1996-Summer 2001)

Communications (or telecommunications) technicians install, repair and maintain radio, television, telephone, and computer equipment. Most technicians work at repair facilities, on customers' premises, or in the field installing or repairing transmitters, receivers, antennas, and computer communications devices. Digital and analog circuits are combined with communications topics. Subjects include AM, FM, receivers, transmitters, antennas, transmission lines, microwave devices, and data communications. Communications technicians are employed at radio and television stations, two-way radio and cellular telephone service facilities, police, fire, and governmental agencies, as well as educational institutions. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Technology Careers Department, Cannon Vocational Technical Center, Room 220, telephone number (517) 483-1136.

REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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

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

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<td>ELCT 161</td>
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ELECTRONICS TECHNOLOGY, DIGITAL OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10127 (Effective Fall 1996–Summer 2001)

Digital electronics technicians install, operate, maintain, and service computer systems. They also diagnose problems caused by mechanical or electrical malfunctions in individual computer units and in complex systems such as local area networks (LANs) and industrial controllers. They deal with the analysis and component level troubleshooting of digital logic and microcomputer circuits and systems, as well as microprocessor-based computers, computer peripherals, and control systems. Digital electronics technicians are employed with automotive manufacturers, industrial automation companies, business machine services companies, telephone companies, instrument sales, robotics repair companies, maintenance companies, etc. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Technology Careers Department, GAMN Vocational Technical Center, Room 220, telephone number (517) 485-1336.

REQUIREMENTS

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<td>ELCT 161</td>
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<td>Advanced Microprocessor</td>
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LIMITED CHOICE REQUIREMENTS

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

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

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GEORAPHIC RESOURCE AND ENVIRONMENTAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 16224 (Effective Fall 1996–Summer 2001)

GRET combines computer technology, mapping technologies, aerial photography, and satellite imagery with the most current environmental resource management and environmental analysis software. Geographic Information Systems (GIS) technicians work with computer drafting, design, database management, graphic design, and computer analysis. Environmental technology requirements include a working knowledge of natural systems and related regulations and their assessment, planning, restoration, and management. GIS technicians are employed with engineering and design firms, state and federal agencies, environmental firms, parks and recreation departments, and with municipalities and local government units. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 of this catalog.

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

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

REQUIREMENTS

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<td>MicroStation Graphic Environment</td>
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<tr>
<td>GRET 205</td>
<td>Principles of Geographic Information Systems</td>
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<tr>
<td>GRET 206</td>
<td>Advanced Techniques in GIS</td>
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<td>GRET 209</td>
<td>Applications in Geographic Information Systems</td>
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<td>GRET 211</td>
<td>Advanced MicroStation</td>
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<td>GRET 220</td>
<td>Hydrological Systems</td>
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<td>GRET 221</td>
<td>Landforms and Soil Systems in GIS</td>
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<td>Environmental Resource Management</td>
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<td>GRET 240</td>
<td>Basic Map Orientation and Construction</td>
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<td>Air Photo Interpretation</td>
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<td>GRET 243</td>
<td>ORACLE Beginning</td>
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<td>GRET 248</td>
<td>GIS Analysis Systems</td>
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<td>Principles of Landscape Architecture</td>
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<td>Landscape Ecology</td>
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TOTAL: 51 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>GRET 214</td>
<td>G.R.A.S.S. Beginning</td>
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<td>Beginning UNIX, GIS Environment</td>
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<td>GRET 255</td>
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<td>LAND 181</td>
<td>Landscape Restoration and Management</td>
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<td>LAND 283</td>
<td>Beginning LandCADO</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 65

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

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

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRET 203</td>
<td>3</td>
</tr>
<tr>
<td>GRET 204</td>
<td>3</td>
</tr>
<tr>
<td>GRET 205</td>
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<tr>
<td>GRET 220</td>
<td>3</td>
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<tr>
<td>GRET 240</td>
<td>3</td>
</tr>
<tr>
<td>LAND 180</td>
<td>3</td>
</tr>
<tr>
<td>LAND 150</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 14–15 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 (See Note 1) | 0 |
| Speech Communication Core Area | 3 |
| Scientific/Technology Core Area | 3 |
| Global Perspectives and Diversity Core Area | 3 |

CHOICE 2: Additional Related Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWR 115</td>
<td>2</td>
</tr>
<tr>
<td>GRET 211</td>
<td>3</td>
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<td>GRET 214</td>
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<tr>
<td>GRET 244</td>
<td>3</td>
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<tr>
<td>GRET 255</td>
<td>3</td>
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<tr>
<td>LAND 181</td>
<td>3</td>
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<tr>
<td>LAND 282</td>
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<td>LAND 283</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 5–6 CREDITS

LANSING COMMUNITY COLLEGE CATALOG 1996-97 — 87
FIRE SCIENCE ACADEMY

CERTIFICATE OF COMPLETION

Curriculum Code: 10709 (Effective Fall 1996–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, HAZ MAT Awareness, and HAZ MAT Operations.

The Fire Science Academy is a selective admission program. In order to be considered for admission to the college, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Fire Science Academy Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232 Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE FIRE SCIENCE ACADEMY PROGRAM

Curriculum Code: 10719 (Effective Fall 1996–Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational Technical Center.

b. Show evidence of graduation from an accredited high school or successful completion of GED examination.

c. Applicant must be at least 18 years of age.

d. Applicant must sign authorization for a LEIN (Law Enforcement Information Network) report and have no felony convictions.

e. Applicant must have excellent physical health with a physical examination approving fire fighter activities.

f. For basic skills assessment, the following 3 tests must be taken at Lansing Community College and the results forwarded to the Admissions Office: MATH-049, READ 115, WRIT 112. Low scores will not necessarily eliminate the applicant.

g. Applicant must have personal medical insurance coverage.

FIRE SCIENCE ACADEMY REQUIREMENTS

Curriculum Code: 10709

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 13 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CREDIT HOURS</td>
</tr>
<tr>
<td>FIRE 101</td>
<td>Michigan F.F.T.C. Basic Fire Training Level I A and B</td>
<td>9</td>
</tr>
<tr>
<td>FIRE 102</td>
<td>Michigan F.F.T.C. Basic Fire Training Level II C and D</td>
<td>4</td>
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LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>TITLE</th>
<th>CREDIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fitness</td>
<td>1 Credit</td>
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</tr>
<tr>
<td>PPFWH 109</td>
<td>Emergency Services Fitness I</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PPFWH 110</td>
<td>Emergency Services Fitness II</td>
<td>1</td>
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<tr>
<td>PPFWH 111</td>
<td>Emergency Services Fitness III</td>
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</tr>
<tr>
<td>PPFWH 112</td>
<td>Emergency Services Fitness IV</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

MINIMUM TOTAL | 14

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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 SCIENCE TECHNOLOGY
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 19123 (Effective Fall 1996–Summer 2001)

This degree program prepares an individual for a career in fire fighting. Included in the curriculum is successful completion of a Michigan Fire Fighting Training Council Fire Fighter I and Fire Fighter II course. In addition, students are required to complete course work in fire safety information and inspection, fire suppression, hazardous material spills and investigative techniques, fire prevention and law, building construction, command and administration, and hydraulics and pump operation. **Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.**

### PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Scheduler for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

### GENERAL EDUCATION

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

### INFORMATION

Contact the Human, Health and Public Service Careers Department, Room 175, Gannon Vocational-Technical Center, telephone number (517) 483-1410.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Total: 59 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GISP 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 101</td>
<td>Michigan F.F.T.C. Basic Fire Training Level I A &amp; B (See Note 1)</td>
<td>9</td>
</tr>
<tr>
<td>FIRE 102</td>
<td>Michigan F.F.T.C. Basic Fire Training Level II C &amp; D (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 110</td>
<td>Fire Prevention and Law</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 115</td>
<td>Building Construction for the Fire Service</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 120</td>
<td>Chemistry of Hazardous Materials</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 125</td>
<td>Fire Protection Systems and Equipment</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 130</td>
<td>Hydraulics and Pump Operations</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 150</td>
<td>Fire Command and Operations</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 210</td>
<td>Fire Investigation</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 220</td>
<td>Hazardous Materials in the Fire Service</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 250</td>
<td>Fire Administration</td>
<td>4</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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</table>

### LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>Total: 1 Credit</th>
</tr>
</thead>
</table>

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)

<table>
<thead>
<tr>
<th>Writing Core Area</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech Communication Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Scientific Technology Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>0</td>
</tr>
</tbody>
</table>

### CHOICE 2: Fitness 1 Credit

| PFHW 109 Emergency Services Fitness I | 1 |
| PFHW 110 Emergency Services Fitness II | 1 |
| PFHW 111 Emergency Services Fitness III | 1 |
| PFHW 112 Emergency Services Fitness IV | 1 |

### MINIMUM TOTAL

| 60 |

---

**NOTES**

1. This curriculum includes FIRE 101 and FIRE 102 which are the Fire Academy courses. The Fire Academy is a selective admission program. Interested students should refer to the applicant to Fire Science Academy curriculum guide #10710 for further information.

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>FIRE 101</th>
<th>CISB 202</th>
<th>FIRE 115</th>
<th>FIRE 130</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 102</td>
<td>FIRE 110</td>
<td>FIRE 120</td>
<td>FIRE 210</td>
</tr>
<tr>
<td>Lim Ch.</td>
<td>OADM 275</td>
<td>FIRE 125</td>
<td>FIRE 220</td>
</tr>
<tr>
<td></td>
<td>SPCH 120</td>
<td>FIRE 150</td>
<td>FIRE 250</td>
</tr>
<tr>
<td></td>
<td>WRIT 124</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DENTAL ASSISTANT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10193 (Effective Fall 1996–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 assisting dentists in the office, preparing and delivering dental instruments, charting teeth, placing and removing temporary crowns, and exposing and processing dental X-ray pictures. Upon graduation from this accredited program and eligibility 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 consult 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. Many of the courses for this program are open only to students officially admitted to the Dental Assistant Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog, or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 3 of this catalog.

INFORMATION
The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Cameron Vocational Technical Center, (517) 483-1354. For Dental Assistant career advising information, contact the Dental Advisor at the Dental Assistant Program Office, Arts and Sciences Building, Room 207F. Telephone number: (517) 483-1457.

REQUIREMENTS FOR ADMISSION TO THE DENTAL ASSISTANT PROGRAM
Curriculum Code: 10193 (Effective Fall 1996–Summer 1997)

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

Phase 1 - Academic Requirements

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Cameron Vocational Technical Center.

b. Graduation from an accredited high school or successfully complete the General Education Development (GED) Examination with an average score of 45 and no score below 25.

c. Complete a conference with the Dental Advisor, telephone (517) 483-1457.

d. Complete the following basic skills assessment tests and show proficiency at the course level. Complete the course with a grade indicated or better. Equivalent or higher level courses accepted.

Computational Placement Test for Reading: READ 115 (3.0 grade)
English Placement Test: WRIT 111 (2.0 grade)
Mathematics Placement Test: MATH 090 (2.0 grade)
Science Inventory: NSCI 110 (2.0 grade)
Tests may be taken at the Arts and Sciences Learning Center, Arts and Sciences Building, Room 306.

e. Program Admissions Activities. Must be accomplished after Phase 1 and prior to beginning the program. This information is obtained from the Dental Assistant Program Office, Arts and Sciences Building, Room 207F.

DENTAL HYGIENIST
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10279 (Effective Fall 1996–Summer 2000)

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 oral cavity, oral, and medical conditions; patient education; preparing and delivering dental instruments and equipment; performing oral hygiene instructions; and performing preventive procedures. Upon graduation from this accredited program, students are 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 the basic academic requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Dental Hygienist Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 3 of this catalog.

GENERAL EDUCATION

General education requirements will be in effect for the Dental Hygienist Associate in Applied Science Degree beginning fall 1997. All candidates who are admitted to the Dental Hygienist Associate in Applied Science Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements, which will be included in the associate degree requirements. See additional information about general education requirements, see page 22.

INFORMATION

The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Cameron Vocational Technical Center, (517) 483-1354. For Dental Hygienist career advising information, contact the Dental Advisor at the Dental Hygienist Program Office, Arts and Sciences Building, Room 306. Telephone number: (517) 483-1457.
REQUIREMENTS FOR ADMISSION TO THE DENTAL HYGIENIST PROGRAM

Curriculum Code: 10279 (Effective Fall 1996 - Summer 1997)

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

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>TOTAL</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 201</td>
<td>Human Anatomy</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>MICR 203</td>
<td>Microbiology</td>
<td>20</td>
<td>3</td>
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<tr>
<td>MICR 204</td>
<td>Microbiology Laboratory</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>20</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:** English Writing
ENGL 122 Writing about Literature and Ideas
WRIT 122 Composition II

**CHOICE 2:** Political Science
POLS 120 American Political System
POLS 121 State and Local Government

**CHOICE 3:** Speech Communication
SPCH 120 Dynamics of Communication
SPCH 140 Interpersonal Communication

**MINIMUM TOTAL**

31 credits

In addition to the above courses, Dental Hygienist Program admission requirements include the following:

Phase 1 - Academic Requirements

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational Technical Center. 

b. Graduate from an accredited high school or successfully complete a General Education Development (GED) Examination with an average score of 45 and no score below 35.

c. Complete the courses required on this Applicant Guide with a cumulative GPA of 3.0 or better.

d. It is recommended that SDEV 124, Techniques of Study, be completed before entering the program.

e. Complete a conference with the Dental Advisor, telephone (517) 483-1457.

Program Acceptance Activities—must be accomplished after Phase I and prior to beginning the program. This information is obtained from the Dental Hygienist Program Office, Arts and Science Bldg., Room 007.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>TITLE</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>ANAT 201</td>
<td>Phgy 202</td>
<td>20</td>
<td>4</td>
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<tr>
<td>SDEV 124</td>
<td>Lim. Ch. 1</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Lim. Ch. 2</td>
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</table>

**DEPARTMENTAL PROGRAM REQUIREMENTS**

Curriculum Code: 10279

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>DADH 124</td>
<td>Dental Radiography</td>
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<tr>
<td>DHYG 110</td>
<td>Oral Health: Practices</td>
<td>3</td>
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<tr>
<td>DHYG 111</td>
<td>Preclinical: Techniques - DH</td>
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<tr>
<td>DHYG 112</td>
<td>Dental Radiographic Techniques</td>
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<tr>
<td>DHYG 113</td>
<td>Head and Neck Anatomy</td>
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<td>DHYG 114</td>
<td>Oral Histology, Embryology and Pathology</td>
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<td>DHYG 116</td>
<td>Dental Emergency Procedures</td>
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<td>DHYG 118</td>
<td>Dental Hygiene: Principles</td>
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<td>Dental Hygiene I</td>
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<td>DHYG 121</td>
<td>Dental Hygiene II</td>
<td>3</td>
<td></td>
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<td>DHYG 122</td>
<td>Dental Pharmacology, Dental Hygiene</td>
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<td>DHYG 126</td>
<td>Principles of Periodontics</td>
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<tr>
<td>DHYG 128</td>
<td>Dental Materials and Methods</td>
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<td>DHYG 210</td>
<td>Clinical Dental Hygiene I</td>
<td>8</td>
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<tr>
<td>DHYG 212</td>
<td>Advanced Dental Hygiene Procedures</td>
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<td>DHYG 214</td>
<td>Clinical Oral Pathology</td>
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<tr>
<td>DHYG 215</td>
<td>Special Patient Care</td>
<td>1</td>
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<tr>
<td>DHYG 216</td>
<td>Periodontal Therapies</td>
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<td>DHYG 218</td>
<td>Nutrition and Oral Health</td>
<td>2</td>
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<td>DHYG 219</td>
<td>Dental Public Health and Education</td>
<td>2</td>
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<td>DHYG 220</td>
<td>Clinical Dental Hygiene II</td>
<td>8</td>
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<tr>
<td>DHYG 222</td>
<td>Dental Specialties</td>
<td>2</td>
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<tr>
<td>DHYG 224</td>
<td>Ethics and Jurisprudence</td>
<td>2</td>
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<tr>
<td>DHYG 229</td>
<td>Community Oral Health</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

72 credits

**NOTES**

1. Dental Hygienist students desiring eligibility to sit for the Michigan Radiographer Certificate exam must also successfully complete DHYG 230. ROA Pr: DH 120 (2 credits, offered spring semester).

**SUGGESTED COURSE SEQUENCE**

Students begin this program each fall semester and courses are offered once a year in the following sequence for a two-year period. Courses are scheduled for fall and spring semesters only.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tbody>
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<tr>
<td>DHYG 111</td>
<td>DHYG 111</td>
<td>4</td>
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<tr>
<td>DHYG 112</td>
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<tr>
<td>DHYG 113</td>
<td>DHYG 113</td>
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<td>DHYG 114</td>
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</tr>
<tr>
<td>DHYG 115</td>
<td>DHYG 115</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

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HEALTH CAREERS
1996-1997 Catalog Lansing Community College www.lcc.edu

DIAGNOSTIC MEDICAL SONOGRAPHY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10263 (Effective Fall 1996–Summer 2001)

Program prepares an individual to use ultrasonic equipment. The sonographer produces images to diagnose 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center. (517) 483-1254

REQUIREMENTS FOR ADMISSION TO THE
DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM

Curriculum Code: 10268 (Effective Fall 1996–Summer 1997)

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

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational-Technical Center.

b. Graduate from an accredited program of Radiologic Technology, Respiratory Therapy, or Nursing

c. MATH 121 with a 2.5 grade or better, or a proficiency exam with a passing score.

d. Evidence of good physical and mental health.

DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM REQUIREMENTS

Curriculum Code: 10263

REQUIREMENTS

<table>
<thead>
<tr>
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MINIMUM TOTAL: 50 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 have transferred in courses from another school or have prerequisites to fulfill, should contact an academic advisor or counselor for help with adjustments.

EMERGENCY MEDICAL SERVICES
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10275 (Effective Fall 1996–Summer 2001)

This degree program prepares the individual extensively for a career in emergency medical care. Included in the 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 unit nurse; (3) critical care transport specialist; (4) medical treatment of victims of hazardous material exposure; (5) EMS management; (6) teaching injury and illness prevention; and (7) teaching emergency first aid. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
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TOTAL CREDITS: 59 CREDITS

92 LANSING COMMUNITY COLLEGE CATALOG 1996-97
LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>TOTAL: 14 CREDITS</th>
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<td>Speech Communication Core Area</td>
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<td>Science Technology Core Area (See Note 1)</td>
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<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
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<table>
<thead>
<tr>
<th>CHOICE 2: Fitness</th>
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</thead>
<tbody>
<tr>
<td>FFHW 109 Emergency Services Fitness I</td>
<td>1</td>
</tr>
<tr>
<td>FFHW 110 Emergency Services Fitness II</td>
<td>1</td>
</tr>
<tr>
<td>FFHW 111 Emergency Services Fitness III</td>
<td>1</td>
</tr>
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<td>FFHW 112 Emergency Services Fitness IV</td>
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<thead>
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<th>CHOICE 3: EMS Requirements</th>
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<tr>
<td>ARGC 110 Pharmacology Allied Health</td>
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</tr>
<tr>
<td>EMTA 105 Ambulance Driving</td>
<td>2</td>
</tr>
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<td>EMTA 106 Legal Issues in Emergency Medical Services</td>
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</tr>
<tr>
<td>EMTA 114 Rescue, Extrication, and Dangerous Situations</td>
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<tr>
<td>EMTA 222 EMS Instructor Coordinator</td>
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</tr>
<tr>
<td>EMTA 223 Advanced EMS I Critical Care EMS</td>
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</tr>
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<td>EMTA 224 Advanced EMS II Hospital Paramedic</td>
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<td>EMTA 225 Medical Hazardous Material</td>
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<td>EMTA 226 Emergency Medical Services Management</td>
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MINIMUM TOTAL: 72

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. This curriculum includes PARA 251 through PARA 263 which are the Paramedic Certificate Program courses. The Paramedic Certificate Program is a selective admission program. It has admission requirements beyond those required for admission to the College. The courses in this program are open only to students officially admitted to 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.

| ANAT 145 | EMTA 103 | PARA 221 | PARA 222 |
| CISB 200 | EMTA 104 | PARA 231 | PARA 232 |
| EMTA 101 | EMTA 112 | PARA 241 | PARA 242 |
| EMTA 102 | OADM 275 | PARA 251 | PARA 252 |
| WRIT 124 | Lim.Ch.2 | PARA 261 | PARA 262 |
| Lim.Ch.1 | Lim.Ch.3 | Lim.Ch.3 | PARA 293 |
| Lim.Ch.2 | Lim.Ch.3 | Lim.Ch.3 | PARA 293 |

BASIC EMERGENCY MEDICAL SERVICES CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10269 (Effective Fall 1996–Summer 2001)

This certificate program prepares an individual to be a basic emergency medical technician (EMT). Basic EMT's perform immediate basic emergency care in medical and traumatic emergencies. Basic EMT's staff ambulances and are employed in hospitals. State licensing is required.

PREREQUISITS

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

INFORMATION

Contact the Human, Health and Public Service Careers Department, Cannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

<table>
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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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<thead>
<tr>
<th>CHOICE 1: Fitness</th>
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<tbody>
<tr>
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<td>FFHW 111 Emergency Services Fitness III</td>
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<td>FFHW 112 Emergency Services Fitness IV</td>
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</table>

MINIMUM TOTAL: 31

SUGGESTED COURSE SEQUENCE

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

| ANAT 145 | ARGC 110 |
| EMTA 101 | CISB 200 |
| EMTA 102 | EMTA 103 |
| EMTA 105 | EMTA 104 |
| EMTA 114 | EMTA 106 |
| Lim.Ch.1 | WRIT 124 |
| Lim.Ch.2 | Lim.Ch. |
MASSAGE THERAPY

CERTIFICATE OF COMPLETION

Curriculum Code: 10102 (Effective Fall 1996-Summer 2001)

Program prepares an individual in the field of soft tissue massage. Massage therapists may be employed in private practice or in a variety of health care settings and health spas. Successful completion of this program prepares an individual for national certification testing through the National Certification Board for Therapeutic Massage and Body Work.

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

INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational Technical Center, Room 178, telephone number (517) 483-1410.

REQUIREMENTS

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<td>Introduction Anatomy and Physiology</td>
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<td>MASC 270</td>
<td>2</td>
<td>Massage Therapy - Beginning</td>
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<td>MASC 271</td>
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<td>Massage Therapy - Intermediate</td>
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<tr>
<td>MASC 272</td>
<td>2</td>
<td>Independent Study Massage Practicum (See Note 1)</td>
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<td>MASC 273</td>
<td>2</td>
<td>Human Structural Dynamics for Massage Therapy</td>
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<tr>
<td>MASC 275</td>
<td>1</td>
<td>Touch for Health I</td>
</tr>
<tr>
<td>MASC 277</td>
<td>2</td>
<td>Polarity Therapy I</td>
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<td>MASC 278</td>
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<td>Business Applications for Massage Therapists</td>
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<tr>
<td>MASC 280</td>
<td>3</td>
<td>Therapeutic Massage Techniques</td>
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<td>MASC 281</td>
<td>2</td>
<td>Sports Massage Techniques</td>
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<td>Healthy Lifestyles</td>
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<td>PFHW 161</td>
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<td>Stress Management</td>
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TOTAL: 23 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>PFHW 163</td>
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<td>PFHW 167</td>
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MINIMUM TOTAL

27 CREDITS

NOTES:
1. Massage Practicum (MASC 272) consists of one hundred hours of massage work, reading and submitting a report on two massage books. Students must complete the practicum within one year of enrolling in the course.
2. The Massage Therapy Program does not fulfill Associate Degree requirements. Students must apply for a certificate, which is granted through the Human, Health and Public Service Careers Department.
3. The Certificate of Completion is not affiliated with any national certification organization.
4. All courses must be completed with a 2.5 grade or better to receive the Certificate of Completion.

SUGGESTED COURSE SEQUENCE

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

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<td>MASC 280</td>
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</table>
| PFHW 163 |   |    | PFHW 161 | Lin.Ch.

94 B LANSING COMMUNITY COLLEGE CATALOG 1996-97
MEDICAL ASSISTANT

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10248 (Effective Fall 1996-Summer 2001)

Program prepares a person to assist the physician in patient care management. The role of the medical assistant is administrative and clinical. Duties include admitting patients, appointment scheduling, telephone and written communication, managing 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 of this catalog.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Wagner Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL ASSISTANT PROGRAM

Curriculum Code: 10250 (Effective Fall 1996-Summer 1997)

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

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<td>CHSE 121</td>
<td>Medical Terminology for Allied Health</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Computer

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MINIMUM TOTAL

8.5

MEDICAL ASSISTANT PROGRAM REQUIREMENTS

Curriculum Code: 10248

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<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
</tr>
<tr>
<td>CHSE 111</td>
<td>Medical Insurance Billing I</td>
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<td>CHSE 121</td>
<td>Medical Terminology for Allied Health I</td>
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<tr>
<td>CHSE 122</td>
<td>Medical Terminology for Allied Health II</td>
</tr>
<tr>
<td>MEDA 100</td>
<td>MA Administrative/Communication Skills</td>
</tr>
<tr>
<td>MEDA 114</td>
<td>Legal Ethical Concepts</td>
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<tr>
<td>MEDA 131</td>
<td>Clinical Skills I</td>
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<td>MEDA 132</td>
<td>Clinical Skills II</td>
</tr>
<tr>
<td>MEDA 141</td>
<td>Basic Medical Laboratory Procedures</td>
</tr>
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<td>MEDA 142</td>
<td>Advanced Medical Laboratory Procedures</td>
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<td>MEDA 181</td>
<td>Administrative Internship</td>
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<td>Clinical Internship</td>
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<td>OADM 207</td>
<td>Medical Transcription</td>
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LIMITED CHOICE REQUIREMENTS

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CHOICE 1: Computer

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<th>COURSE</th>
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</tr>
<tr>
<td>CABS 114</td>
<td>2</td>
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</table>

MINIMUM TOTAL

39

NOTES

1. Complete the courses required for program with a minimum 2.5 grade or better.

SUGGESTED COURSE SEQUENCE

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

Curriculum Code: 10235 (Effective Fall 1996–Summer 2001)

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 Licensed Practical Nurse (LPN) Program prepares an individual to, with supervision from the Registered Nurse, implement a plan of care for clients in a variety of health care settings. The education and scope of practice of the LPN is determined by state law. Successful completion of the National Council Licensing Examination-Practical Nurse is required.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

**PREREQUISITES**

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

**INFORMATION**

The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

**REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS**

Curriculum Code: 10231 (Effective Fall 1996–Summer 1997)

In order to be considered as a candidate for these programs, students must complete the following courses:

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<tr>
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<tr>
<td>ANAT 201</td>
<td>Human Anatomy</td>
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<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
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<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

14

In addition to the above courses, Nursing Program admission requirements include the following:

a. Submit a completed Application for Selective Admission to the Admissions Office, Room 232, Gannon Vocational Technical Center.

b. Graduate from an accredited high school or successfully complete General Education Development (GED) examination with an average score of 45 and no score below 35.

c. Complete the courses required on this Application Guide with a cumulative 2.0 GPA. Each course must be completed with a minimum grade of C.

d. Successfully complete the MATH 107 proficiency examination (Math Lab) or the MATH 107 course with a minimum grade of C.

e. Complete the hours required on this Application Guide with a cumulative 2.0 GPA. Each course must be completed with a minimum grade of C.

**SUGGESTED COURSE SEQUENCE**

Students may begin this program either fall or spring semester. A student may not begin a new semester until the) has successfully completed all the courses listed in a previous semester, semester below.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 45 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>ANAT 201</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>NURS 150</td>
<td>Nursing Process I: Introduction to Nursing (See Note 1)</td>
</tr>
<tr>
<td>NURS 160</td>
<td>Nursing Process II: Common Acute Health Problems</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Nursing Process III: Family Health I</td>
</tr>
<tr>
<td>NURS 190</td>
<td>Practical Nursing Role</td>
</tr>
<tr>
<td>NURS 200</td>
<td>Pharmacology (See Note 1)</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
</tr>
<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>PSYC 205</td>
<td>Human Growth and Development</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

45

**NOTES**

1. NURS 200 may be taken one year 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.
NURSING, RN OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10222 (Effective Fall 1996-Summer 2000)

The Nursing Program at Lansing Community College is a nationally accredited program and implements the National League for Nursing's Standards for Associate Degree Programs. There are specific prerequisites required for entry into the program. Building on these prerequisites, a student completing the first year receives a Certificate of Achievement and is eligible to take a national examination for Licensed Practical Nurse (LPN). A student continuing through the second year will receive an associate's degree and is eligible to take the national examination for Registered Nurse (RN).

The Registered Nurse (RN) Program prepares the individual to be a primary care provider to clients of all ages in a variety of health care settings. As an essential member of the health care team, the RN is responsible for developing, implementing, and evaluating a plan of care for clients. The RN is required to assist clients in achieving their health goals through effective communication, decision-making, problem-solving, management and technological skills. Registered nurses work in hospitals, clinics, offices, nursing homes, and home health care settings. In addition to schools, research facilities, and community agencies. The education and scope of practice of the RN is determined by state law. The student must successfully complete this program and the National Council Licensure Examination Registered Nurse.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

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

GENERAL EDUCATION
General education requirements will be in effect for the Nursing, RN Option, Associate Degree Program beginning in fall of 1997. All candidates who are admitted to the Nursing Associate Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements, which will be included in the associate degree requirements. For additional information about general education requirements, see page 22.

INFORMATION
The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gammon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS

Curriculum Code: 10221 (Effective Fall 1996-Summer 1997)

In order to be considered as a candidate for these programs, students must complete the following courses:

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 14 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>ANAT 201</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>WRT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 14

In addition to the above courses, Nursing Program admission requirements include the following:

a. Submit a completed Application for Selective Admission Programs to the Admissions Office, Room 232, Gammon Vocational-Technical Center.
b. Graduate from an accredited high school or successfully complete General Education Development (GED) Examination with an average score of 45 and no score below 35.
c. Complete the courses required on this Applicant Guide with a cumulative 2.6 GPA. Each course must be completed with a minimum 2.5 grade or better.
d. Successfully complete the MATH 107 proficiency examination (Math Lab) or the MATH 107 course with a minimum 2.5 grade.
e. Current Basic Cardiac Life Support (BCLS) certification.
f. Evidence of good physical, emotional and mental health.

NURSING, RN OPTION REQUIREMENTS

Curriculum Code: 10222

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 69 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>ANAT 201</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>MICH 203</td>
<td>Microbiology</td>
</tr>
<tr>
<td>NURS 150</td>
<td>Nursing Process I: Introduction to Nursing (See Note 1)</td>
</tr>
<tr>
<td>NURS 160</td>
<td>Nursing Process II: Common Acute Health Problems</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Nursing Process III: Family Health</td>
</tr>
<tr>
<td>NURS 180</td>
<td>Practical Nursing Role</td>
</tr>
<tr>
<td>NURS 200</td>
<td>Pharmacology (See Note 1)</td>
</tr>
<tr>
<td>NURS 260</td>
<td>Nursing Process IV: Family Health</td>
</tr>
<tr>
<td>NURS 265</td>
<td>Nursing Process V: Family Health</td>
</tr>
<tr>
<td>NURS 280</td>
<td>Nursing Process VI: Chronic Health Problems</td>
</tr>
<tr>
<td>NURS 269</td>
<td>Nursing Process VII: Acute/Critical Health Problems</td>
</tr>
<tr>
<td>NURS 290</td>
<td>Nursing Process VIII: ADN as Provider and Manager of Care</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
</tr>
<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>PSYC 205</td>
<td>Human Growth and Development</td>
</tr>
<tr>
<td>WRT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS TOTAL: 4 CREDITS

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

| CHOICE 1: | Political Science | 4 Credits |
| POLS 120 | American Political System | 4 |
| POLS 121 | State and Local Government | 4 |

MINIMUM TOTAL 73

NOTES
1. NURS 260 may be taken one semester prior to NURS 150 or concurrently with NURS 150.
2. Although not required for the Associate Degree, MICH 203 is strongly recommended. It will be required for nurses who continue on to a four-year university.
3. Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program.
4. Licensed Practical Nurses (LPNs) wishing to complete the second year of this curriculum should make an appointment with the nursing faculty to receive individual advising, telephone (517) 483-1410.

SUGGESTED COURSE SEQUENCE

Students may begin this program either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all the courses listed in a previous semester. Below NURS 260 is the only NURS prefix course that is offered summer semester.
**PARAMEDIC CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10272 (Effective Fall 1996–Summer 2001)

This program prepares the basic EMT in advanced techniques of administering care in life-threatening conditions. Paramedics are employed by advanced life support ambulances and in emergency departments and critical care units of hospitals. State licensing is required.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Paramedic Program.

**PREREQUISITES**

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

**INFORMATION**

The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1234.

**REQUIREMENTS FOR ADMISSION TO THE PARAMEDIC PROGRAM**

Curriculum Code: 10272 (Effective Fall 1996–Summer 1997)

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TOTAL: 4 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS (See Note D)**

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

**CHOICE 1:**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>0–14 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMCC 110</td>
<td>Pharmacology Allied Health</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 105</td>
<td>Ambulance Driving</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 108</td>
<td>Legal Issues EMS</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 114</td>
<td>Rescue, Extrication, and Dangerous Situations</td>
<td>3</td>
</tr>
<tr>
<td>EMTA 200</td>
<td>EMT Special</td>
<td>5</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

|                  | 4–18 |

In addition to the anatomy, Paramedic Program admission requirements include the following:

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational-Technical Center.

b. Graduate from an accredited high school or successfully complete General Education Development (GED) Examination with an average score of 45 and no score below 35.

c. Demonstrated competency by course completion or testing in MATH 050. READ 015. WRIT 112. Results will be used for academic counseling.

d. Have successfully completed one of the following:
   - Option I Successful completion of the Basic Emergency Medical Services certificate program with a minimum GPA of 2.5.
   - Option II Successful completion of anatomy (ANAT 145 or above) and Basic EMT with a GPA of 3.5.
   - Option III Successful completion of Basic EMT and a total of 40 points from the following with a minimum GPA of 2.5:
     - CHSE 121 (Medical Terminology) 15 points
     - Limited choice courses (2 points per credit)
     - Each 100 hours of EMT-related work experience 10 points

**PARAMEDIC PROGRAM REQUIREMENTS**

Curriculum Code: 10272

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARA 221</td>
<td>Medical Trauma I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PARA 222</td>
<td>Medical Trauma II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PARA 231</td>
<td>Cardiology I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PARA 232</td>
<td>Cardiology II</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PARA 241</td>
<td>Pharmacology I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PARA 242</td>
<td>Pharmacology II</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PARA 251</td>
<td>Skills I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PARA 252</td>
<td>Skills II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PARA 261</td>
<td>Clinical I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>PARA 262</td>
<td>Clinical II</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:**

- Fitness (See Note I) 2 Credits
- PFHW 109 Emergency Services Fitness I 1
- PFHW 110 Emergency Services Fitness II 1
- PFHW 111 Emergency Services Fitness III 1
- PFHW 112 Emergency Services Fitness IV 1

**MINIMUM TOTAL**

|                  | 34  |

**NOTES**

1. Students may choose two different courses from Choice 1 or may take the same course twice for a total of 2 credits.

2. Complete each course required with a minimum 2.5 grade or better in order to earn a Certificate of Achievement in the Paramedic Program.

**SUGGESTED COURSE SEQUENCE**

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

| PARA 221 | PARA 222 |
| PARA 231 | PARA 232 |
| PARA 241 | PARA 242 |
| PARA 251 | PARA 252 |
| PARA 261 | PARA 262 |

Um.Ch.  Um.Ch.
RADIATION THERAPY ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10264 (Effective Fall 1996–Summer 2000)

A radiation therapist is a professional who assists the radiation oncologist in the care and treatment of a cancer patient. Responsibilities include, but are not limited to, the delivery of accurate treatments as prescribed; accurate documentation of treatments; assisting in simulation and treatment planning; emotional support and education of patients, their families, new staff, and students. Radiation therapists are employed in hospitals, free-standing clinics, universities, and private clinics. To earn the associate degree, students must successfully complete the requirements set forth in the curriculum guide. Graduates of the program will be eligible for examination by the American Registry of Radiologic Technologists (ARRT). Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Radiation Therapy Program.

PREREQUISITES

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

GENERAL EDUCATION

General education requirements will be in effect for the Radiation Therapy Associate in Applied Science Degree beginning in fall of 1997. All candidates who are admitted to the Radiation Therapy Associate in Applied Science Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements which will be included in the associate degree requirements. For additional information about general education requirements, see page 22.

INFORMATION

The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE RADIATION THERAPY PROGRAM

Curriculum Code: 10220 (Effective Fall 1996–Summer 1997)

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMSD 123</td>
<td>CPR for Health Care Professionals</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 121</td>
<td>College Algebra I</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 4.5

In addition to the above courses, Radiation Therapy Program admission requirements include the following:

a. Submit completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational-Technical Center.

b. Graduate from an accredited program in Radiologic Technology.

c. MATH 121, with a 2.5 grade or better, or a proficiency exam with a passing score.

d. Evidence of good physical and mental health.

RADIATION THERAPY PROGRAM REQUIREMENTS

Curriculum Code: 10264

<table>
<thead>
<tr>
<th>REQUIREMENTS CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRAD 105</td>
<td>Introduction Radiation Therapy</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 106</td>
<td>Oncology Principles Patient Care</td>
<td>1</td>
</tr>
<tr>
<td>IRAD 204</td>
<td>Principles Oncology I</td>
<td>4</td>
</tr>
<tr>
<td>IRAD 205</td>
<td>Principles Oncology II</td>
<td>4</td>
</tr>
<tr>
<td>IRAD 219</td>
<td>Clinical Radiation Oncology I</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 220</td>
<td>Clinical Radiation Oncology II</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 231</td>
<td>Radiation Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 232</td>
<td>Advanced Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 234</td>
<td>Quality Assurance in Radiation Therapy</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 235</td>
<td>Basic Dosimetry</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 270</td>
<td>Radiobiology</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 285</td>
<td>Clinical Experience I (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 286</td>
<td>Clinical Experience II (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 287</td>
<td>Clinical Experience III (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 288</td>
<td>Clinical Experience IV (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 289</td>
<td>Advanced Clinical Skills I (See Note 1)</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 62 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Political Science

| POLS 120          | American Political System  | 4            |
| POLS 121          | State and Local Government | 4            |

TOTAL: 8 CREDITS

MINIMUM TOTAL: 69

CHOICE 2: Computers (See Note 2)

| IRAD 220          | | 3 Credits |

TOTAL: 3 CREDITS

NOTES

1. Students with four years of patient care experience (delivery of treatment to cancer patients) in Radiation Therapy, need to contact the Program Director regarding advanced standing. Advanced standing students must register for IRAD 290 in place of IRAD 265, 286, 287, 288, 289.

2. Students are required to complete an introduction to computers course equaling 3 credits prior to graduation.

3. Students are required to have current CPR Certification for the duration 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 have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

**Fall Entry, Advanced Standing Students Only**

<table>
<thead>
<tr>
<th>IRAD 105</th>
<th>IRAD 106</th>
<th>IRAD 219</th>
<th>IRAD 220</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRAD 204</td>
<td>IRAD 205</td>
<td>IRAD 234</td>
<td>IRAD 235</td>
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<tr>
<td>IRAD 231</td>
<td>IRAD 232</td>
<td>IRAD 235</td>
<td>IRAD 236</td>
</tr>
<tr>
<td>IRAD 286</td>
<td>IRAD 287</td>
<td>IRAD 288</td>
<td>IRAD 289</td>
</tr>
</tbody>
</table>
RADIOLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10196 (Effective Fall 1996–Summer 2000)

Radiologic technologists, also called radiographers, operate X-ray equipment under the direction of a physician, taking pictures of internal parts of the body. Most often radiologic technologists are employed in hospitals, clinics, and physician offices. To earn the associate degree students must complete all requirements listed in the curriculum guide. Graduates of the program will be eligible for examination by the American Registry of Radiologic Technologists (ARRT). Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Radiologic Technology Program.

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

GENERAL EDUCATION
General education requirements will be in effect for the Radiologic Technology Associate in Applied Science Degree beginning in fall of 1997. All candidates who are admitted to the Radiologic Technology Associate in Applied Science Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements, which will be included in the associate degree requirements. For additional information about general education requirements, see page 22.

INFORMATION
The admission and graduation requirements for this program may change each academic year. For the most recent and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE RADIOLOGIC TECHNOLOGY PROGRAM

Curriculum Code: 10198 (Effective Fall 1996–Summer 1997)

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 10 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 151</td>
<td>Anatomy and Physiology I 3</td>
</tr>
<tr>
<td>ANAT 152</td>
<td>Anatomy and Physiology II 3</td>
</tr>
<tr>
<td>MATH 112</td>
<td>Intermediate Algebra 4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 10

In addition to the above courses, Radiologic Technology Program admission requirements include the following:

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational Technical Center.

b. Graduate from an accredited high school or successfully complete General Education Development (GED) Examination with an average score of 45 and no score below 35.

c. Complete the courses required on this Application Guide with a cumulative 2.5 GPA. Each course must be completed with minimum 2.5 grade or better.

d. Evidence of good physical and mental health.

e. Applicants transferring from another college must have equivalent credit to Lansing Community College’s MATH 112 (Intermediate Algebra). The placement test is available in Arts and Sciences Bldg. Room 309. No charge or appointment is necessary.

RADIOLOGIC TECHNOLOGY PROGRAM REQUIREMENTS

Curriculum Code: 10196

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>AHCC 104</td>
<td>Patient Care Principles 3</td>
</tr>
<tr>
<td>ANAT 151</td>
<td>Anatomy and Physiology I 3</td>
</tr>
<tr>
<td>ANAT 152</td>
<td>Anatomy and Physiology II 3</td>
</tr>
<tr>
<td>CSIB 109</td>
<td>Introduction to Computer Information Systems 4</td>
</tr>
<tr>
<td>IRTX 100</td>
<td>Introduction to Imaging 4</td>
</tr>
<tr>
<td>IRTX 111</td>
<td>Radiographic Positioning I 7</td>
</tr>
<tr>
<td>IRTX 112</td>
<td>Radiographic Positioning II 7</td>
</tr>
<tr>
<td>IRTX 113</td>
<td>Radiographic Positioning III 2</td>
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<tr>
<td>IRTX 114</td>
<td>Gross-Sectional Anatomy 3</td>
</tr>
<tr>
<td>IRTX 121</td>
<td>Radiographic Exposure I 3</td>
</tr>
<tr>
<td>IRTX 122</td>
<td>Radiographic Exposure II 3</td>
</tr>
<tr>
<td>IRTX 131</td>
<td>Radiologic Physics 3</td>
</tr>
<tr>
<td>IRTX 132</td>
<td>Radiology and Protection 2</td>
</tr>
<tr>
<td>IRTX 160</td>
<td>Radiologic Emergencies 1</td>
</tr>
<tr>
<td>IRTX 200</td>
<td>Introduction to Radiologic Pathology 2</td>
</tr>
<tr>
<td>IRTX 210</td>
<td>Radiographic Department Management 1</td>
</tr>
<tr>
<td>IRTX 212</td>
<td>Clinical Practice I (See Note 1) 6</td>
</tr>
<tr>
<td>IRTX 214</td>
<td>Comprehensive Experience I 9</td>
</tr>
<tr>
<td>IRTX 215</td>
<td>Comprehensive Experience II (See Note 1) 9</td>
</tr>
<tr>
<td>IRTX 219</td>
<td>Imaging Update 1</td>
</tr>
<tr>
<td>IRTX 223</td>
<td>Clinical Practice II (See Note 1) 3</td>
</tr>
<tr>
<td>IRTX 236</td>
<td>Comprehensive Experience III (See Note 1) 5</td>
</tr>
<tr>
<td>MATH 112</td>
<td>Intermediate Algebra 4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS TOTAL: 12 CREDITS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Psychology (See Note 2)</td>
<td>4 Credits</td>
</tr>
<tr>
<td>2</td>
<td>Communication (See Note 3)</td>
<td>4 Credits</td>
</tr>
<tr>
<td>3</td>
<td>Political Science</td>
<td>4 Credits</td>
</tr>
<tr>
<td>POLS 120</td>
<td>American Political System</td>
<td>4</td>
</tr>
<tr>
<td>POLS 121</td>
<td>State and Local Government</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 99

NOTES
1. These course codes are for students admitted for fall semester. Students admitted in the spring will take the same course content with different course codes.

2. Students are required to complete any 100/200 level psychology course equaling 4 credits.

3. Students are required to complete any 100/200 level communication (English, Speech, Writing or Sign Language) course equaling 4 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 have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

Fall Entry

<table>
<thead>
<tr>
<th>H</th>
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<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
</tr>
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<tbody>
<tr>
<td>AHCC 104</td>
<td>IRTX 112</td>
<td>IRTX 113</td>
<td>IRTX 114</td>
<td>IRTX 132</td>
<td>CSIB 100</td>
</tr>
<tr>
<td>IRTX 100</td>
<td>IRTX 122</td>
<td>IRTX 160</td>
<td>IRTX 180</td>
<td>IRTX 131</td>
<td>IRTX 210</td>
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<td>IRTX 111</td>
<td>IRTX 212</td>
<td>IRTX 233</td>
<td>IRTX 214</td>
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<tr>
<td>IRTX 121</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
</tr>
</tbody>
</table>

Spring Entry

<table>
<thead>
<tr>
<th>H</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
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</thead>
<tbody>
<tr>
<td>AHCC 104</td>
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<td>IRTX 113</td>
<td>IRTX 114</td>
<td>IRTX 132</td>
<td>CSIB 100</td>
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<td>IRTX 100</td>
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<td>IRTX 231</td>
<td>IRTX 200</td>
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<tr>
<td>IRTX 121</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
<td>IRTX 214</td>
</tr>
</tbody>
</table>
RESPIRATORY THERAPIST ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10244 (Effective Fall 1996-Summer 2000)

A respiratory therapist is a key member of the health care team, working alongside physicians, nurses and other allied health professionals. They provide basic respiratory care services to patients with pulmonary disorders. The majority of therapists are employed by hospitals; however, other opportunities include sub-acute care, home care, and pulmonary and/or cardiac rehabilitation. Program graduates are eligible to complete a series of nationally recognized examinations leading to recognition as a Registered Respiratory Therapist.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Respiratory Therapist Program.

PREREQUISITES

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

GENERAL EDUCATION

General education requirements will be in effect for the Respiratory Therapist Associate Degree Program beginning in fall of 1997. All candidates who are admitted to the Respiratory Therapist Associate Degree Program beginning fall 1997 or beyond will be required to fulfill general education requirements, which will be included in the associate degree requirements. For additional information about general education requirements, see page 22.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. For the most recent and complete information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE RESPIRATORY THERAPY PROGRAM

Curriculum Code: 10241 (Effective Fall 1996-Summer 1997)

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 151</td>
<td>Anatomy and Physiology I</td>
<td>3</td>
</tr>
<tr>
<td>EMSB 102</td>
<td>CPR for Health Care Professionals</td>
<td>3</td>
</tr>
<tr>
<td>MATH 107</td>
<td>Introductory Algebra</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: Chemistry

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 120</td>
<td>Basic General, Organic and Biological Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 125</td>
<td>Basic Chemistry</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 11.5

In addition to the above courses, Respiratory Therapist Program admission requirements include the following:

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational-Technical Center.
b. Graduate from an accredited high school or successfully complete General Education Development (GED) Examination with an average score of 45 and no score below 35.
c. Complete required courses with minimum 2.0 grade or better.
d. CHEM 120 or MATH 107 may be waived by appropriate exam. Exams are available in the Arts and Sciences Bldg., Room 309. Applicants must pass for competency not placement.
e. Evidence of good physical and mental health.

RESPIRATORY THERAPIST REQUIREMENTS

Curriculum Code: 10244

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 152</td>
<td>Anatomy and Physiology II</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>4</td>
</tr>
<tr>
<td>RESP 123</td>
<td>Cardiopulmonary Applied Basic Sciences and Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>RESP 125</td>
<td>Cardiopulmonary Anatomy and Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>RESP 126</td>
<td>Cardiopulmonary Physiology and Disease</td>
<td>3</td>
</tr>
<tr>
<td>RESP 128</td>
<td>Cardiopulmonary Pharmacology and Metrology</td>
<td>2</td>
</tr>
<tr>
<td>RESP 131</td>
<td>Respiratory Therapy Technology I</td>
<td>4</td>
</tr>
<tr>
<td>RESP 132</td>
<td>Respiratory Therapy Technology II</td>
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<tr>
<td>RESP 133</td>
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<tr>
<td>RESP 142</td>
<td>Respiratory Therapy Clinical Practice I</td>
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<tr>
<td>RESP 143</td>
<td>Respiratory Therapy Clinical Practice II</td>
<td>5</td>
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<tr>
<td>RESP 234</td>
<td>Respiratory Therapy Technology IV</td>
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<tr>
<td>RESP 236</td>
<td>Respiratory Therapy Technology V</td>
<td>3</td>
</tr>
<tr>
<td>RESP 244</td>
<td>Advanced Respiratory Clinical Practice III</td>
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<tr>
<td>RESP 245</td>
<td>Advanced Respiratory Clinical Practice IV</td>
<td>3</td>
</tr>
<tr>
<td>RESP 251</td>
<td>Practice of Pulmonary Medicine</td>
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</tr>
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<td>RESP 252</td>
<td>Respiratory Professional Testing and Management</td>
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</tr>
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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: Political Science

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 120</td>
<td>American Political System</td>
<td>4</td>
</tr>
<tr>
<td>POLS 121</td>
<td>State and Local Government</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 81

SUGGESTED COURSE SEQUENCE

The following sequence of courses is recommended for this program. Courses with a course code of RESP or ANAT must be completed in the sequence indicated. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>ANAT 152</td>
<td>RESP 126</td>
<td>RESP 133</td>
<td>PSYC 200</td>
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<td>RESP 123</td>
<td>RESP 132</td>
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<td>RESP 234</td>
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<tr>
<td>RESP 125</td>
<td>RESP 142</td>
<td>WRIT 121</td>
<td>RESP 244</td>
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<td>RESP 128</td>
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<td>RESP 131</td>
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<table>
<thead>
<tr>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESP 235</td>
</tr>
<tr>
<td>RESP 245</td>
</tr>
<tr>
<td>RESP 252</td>
</tr>
</tbody>
</table>
 Lim.Ch.
Surgical Technology Certificate of Achievement

Curriculum Code: 10216 (Effective Fall 1996–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 all sterile areas and instruments for use, assisting with sterile draping, gowning and gloving, and handing appropriate sterile instruments to the surgical assistant or surgeon. The surgical technologist may work in a hospital operating room, a surgeon's private office, a surgical outpatient clinic, or 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. For the most current and complete application information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483 1254.

REQUIREMENTS FOR ADMISSION TO
THE SURGICAL TECHNOLOGY PROGRAM

Curriculum Code: 10214 (Effective Fall 1996–Summer 1997)

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 4 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT</td>
<td>Introductory Anatomy and Physiology</td>
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</table>

MINIMUM TOTAL

4

In addition to the above course, Surgical Technology Program admission requirements include the following:

a. Submit a completed Application for Selective Admissions Programs to the Admissions Office, Room 232, Gannon Vocational-Technical Center.

b. Graduate from an accredited high school or successfully complete the General Education Development (GED) Examination with an average score of 45 and no score below 35.

c. Evidence of good physical and mental health.

d. Complete the course required in this Applicant Guide with a minimum 2.5 grade or better.

Surgical Technology Program Requirements

Curriculum Code: 10216

REQUIREMENTS

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<th>CODE</th>
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<th>TOTAL: 37 CREDITS</th>
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<td>AHCC</td>
<td>Introduction to Pathology</td>
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</tr>
<tr>
<td>AHCC</td>
<td>Pharmacology Allied Health</td>
<td>2</td>
</tr>
<tr>
<td>ANAT</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>SURG</td>
<td>Fundamental Surgical Technician</td>
<td>3</td>
</tr>
<tr>
<td>SURG</td>
<td>The Surgical Patient</td>
<td>2</td>
</tr>
<tr>
<td>SURG</td>
<td>Surgical Assistors</td>
<td>2</td>
</tr>
<tr>
<td>SURG</td>
<td>Operative Procedures</td>
<td>6</td>
</tr>
<tr>
<td>SURG</td>
<td>Applied Surgical Techniques I</td>
<td>1</td>
</tr>
<tr>
<td>SURG</td>
<td>Applied Surgical Techniques II</td>
<td>4</td>
</tr>
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<td>SURG</td>
<td>Applied Surgical Techniques III</td>
<td>8</td>
</tr>
<tr>
<td>SURG</td>
<td>Applied Surgical Techniques IV</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

37

NOTES

1. Complete the courses required for program with a minimum 2.5 grade or better.

SUGGESTED COURSE SEQUENCE

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

<table>
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<th>I (A)</th>
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<td>122</td>
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</table>
HEATING, AIR CONDITIONING, AND REFRIGERATION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10161 (Effective Fall 1996–Summer 2001)

HVACR technicians work on systems that control temperature, humidity, and air quality of enclosed spaces. They are required to design, install, service, and maintain various types of equipment used to control comfort, preservation of food products, critical medical supplies, and computer and mechanical processes in residential, commercial, industrial, and institutional environments. HVACR technicians must have a strong mechanical aptitude, be self-motivated, willing to accept challenges, and have a structured approach to problem solving. They should also have good communication skills, the ability to work well with people, and understand all aspects of the construction trades. HVACR technicians are employed by HVACR contractors, hospitals, schools, manufacturers, housing and apartment complexes, restaurants, food stores, municipalities, and government organizations.

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

GENERAL EDUCATION

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

INFORMATION

Contact the Technology Careers Department, Garmon Vocational-Technical Center, Room 220, telephone number (517) 483-1335.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
<td>2</td>
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<tr>
<td>HVAC 106</td>
<td>Fundamentals of Heating, Ventilating, and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 111</td>
<td>Applied Electricity I</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 112</td>
<td>Applied Electricity II</td>
<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>
<td>4</td>
</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>
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<tr>
<td>HVAC 231</td>
<td>Heat Pump</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 241</td>
<td>Refrigeration II</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 250</td>
<td>Pneumatic Control</td>
<td>2</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 15-16 CREDITS</th>
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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>HVAC 100</th>
<th>HVAC 111</th>
<th>HVAC 211</th>
<th>HVAC 201</th>
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</thead>
<tbody>
<tr>
<td>HVAC 105</td>
<td>HVAC 120</td>
<td>HVAC 220</td>
<td>HVAC 221</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>HVAC 130</td>
<td>HVAC 230</td>
<td>HVAC 231</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Lim. Ch.</td>
<td>HVAC 240</td>
<td>HVAC 241</td>
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<tr>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
<td>HVAC 250</td>
</tr>
</tbody>
</table>

HEATING AND AIR CONDITIONING

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10143 (Effective Fall 1996–Summer 2001)

Students receive instruction on how to install, service, and maintain heating, air conditioning, and refrigeration systems, including the sheet metal and electrical, to prepare them for an entry-level position.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 32 CREDITS</th>
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<tr>
<td>HVAC 100</td>
<td>Fundamentals of Heating, Ventilating, and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
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</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
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</tr>
<tr>
<td>HVAC 111</td>
<td>Applied Electricity II</td>
<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 220</td>
<td>Heating II</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 221</td>
<td>Introduction to Hydronics</td>
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<tr>
<td>HVAC 230</td>
<td>Air Conditioning II</td>
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<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOOSE 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

CHOOSE 2: Technical Related 3-4 Credits

- BLDT 103 Structural Blueprint Reading 4
- BLDT 121 Residential Framing and Foundations 4
- BLDT 281 BCAI Uniform Code 3
- COOP 210 Cooperative Education (Technology) 3
- HVAC 211 Schematics 3
- HVAC 231 Heat Pump 4

MINIMUM TOTAL 68

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>HVAC 100</th>
<th>HVAC 111</th>
<th>HVAC 220</th>
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<tr>
<td>HVAC 105</td>
<td>HVAC 120</td>
<td>HVAC 221</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>HVAC 130</td>
<td>HVAC 230</td>
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LANSING COMMUNITY COLLEGE CATALOG 1996–97 • 103
HOTEL-MOTEL/FOOD MANAGEMENT SPECIALIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10711 (Effective Fall 1996-Summer 2001)

A hotel-motel or food service manager directs and coordinates operations such as housekeeping, food service, accounting, and guest room services in facilities. Graduates of this program are prepared to work in hotels, motels, and other lodging facilities in a variety of environments. A food management specialist serves the public's need for meals away from home through their particular establishment's food and service. Expansions of chains and franchises have opened opportunities for advancement. Graduates of this program are prepared to work in restaurants, clubs, resorts, institutional food service, and similar establishments.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210; telephone number (517)483-1523.

REQUIREMENTS

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<thead>
<tr>
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<td>CABS 110</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>HMFS 101</td>
<td>Introduction to Hospitality and Food Service Operations</td>
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<tr>
<td>HMFS 130</td>
<td>Food Production I</td>
</tr>
<tr>
<td>HMFS 131</td>
<td>Internship and Seminar</td>
</tr>
<tr>
<td>HMFS 203</td>
<td>Hotel-Restaurant Law</td>
</tr>
<tr>
<td>HMFS 204</td>
<td>Human Relations/Supervisory Development</td>
</tr>
<tr>
<td>HMFS 205</td>
<td>Hotel-Restaurant Management</td>
</tr>
<tr>
<td>HMFS 207</td>
<td>Financial Control and Management I</td>
</tr>
<tr>
<td>HMFS 215</td>
<td>Hospitality Sales/Marketing</td>
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<tr>
<td>HMFS 232</td>
<td>Food and Labor Cost Control</td>
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LIMITED CHOICE REQUIREMENTS

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1. | 2. | 3. | 4. |
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<td>CABS 110</td>
<td>HMFS 204</td>
<td>HMFS 190</td>
<td>HMFS 215</td>
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<td>HMFS 101</td>
<td>HMFS 205</td>
<td>HMFS 203</td>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tr>
</tbody>
</table>

NOTES

1. Credit may be taken from Subchoice 2A, 2B, 2C, and/or departmentally approved HMFS electives. In addition, other departmentally approved recommended electives may be taken, not to exceed nine 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>CHOICE 1: General Education Core Areas</th>
<th>12 Credits</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
<td>3</td>
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<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
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<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
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<table>
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<tr>
<th>CHOICE 2: Specialization (Choose 1 Subchoice - See Note 1)</th>
<th>10 Credits</th>
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<tr>
<td>Subchoice 2A: Hotel-Motel Management Specialist</td>
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<tr>
<td>HMFS 106 Hotel and Restaurant Human Resources Management</td>
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<td>HMFS 206 Front Office Management</td>
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<td>HMFS 238 Financial Control and Management II</td>
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<td>HMFS 240 Supervisory Housekeeping</td>
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<td>HMFS 223 Convention Management and Service</td>
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<td>TRVL 150 Tourism/Travel Operations</td>
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<table>
<thead>
<tr>
<th>Subchoice 2B: Food Management Specialist</th>
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<tr>
<td>HMFS 132 Food Production II</td>
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<tr>
<td>HMFS 135 Quantity Food Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 170 Menu Design and Layout</td>
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</tr>
<tr>
<td>HMFS 233 Food Service Sanitation</td>
<td>2</td>
</tr>
<tr>
<td>HMFS 254 Mixology</td>
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</table>
CHILD DEVELOPMENT
ASSOCIATE IN APPLIED SCIENCE

Curriculum Code: 10108 (Effective Fall 1996–Summer 2001)

This degree program prepares individuals to work in child care as a teacher, teacher assistant or program director. Students learn to plan and implement high quality, developmentally appropriate programs for all ages of children, infants through school-age, in both centers and family child care homes. Graduates of the associate degree program meet the educational requirements for child care center program directors as specified by the Michigan Department of Social Services Child Care Licensing Regulations. The program involves several semesters of field work in child care settings. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Human, Health, and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone (517) 483-1410.

<table>
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<tr>
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<td>Child Growth and Development; 0–5 years</td>
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<tr>
<td>CHDV 111</td>
<td>Positive Guidance and Communication Skills With Children</td>
</tr>
<tr>
<td>CHDV 112</td>
<td>Building Relationships with Families in Child Care</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health and Safety Issues in Child Care</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Curriculum and Learning Environments for Preschoolers</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>Infant Toddler Program Development</td>
</tr>
<tr>
<td>CHDV 222</td>
<td>School-Age Child Care Program Development</td>
</tr>
<tr>
<td>CHDV 239</td>
<td>Child Care Center Administration</td>
</tr>
<tr>
<td>CHDV 281</td>
<td>Issues in Teaching in Child Care (See Note 1)</td>
</tr>
<tr>
<td>CHDV 282</td>
<td>Child Development Practicum (See Note 1)</td>
</tr>
<tr>
<td>S0CL 120</td>
<td>Introduction to Sociology</td>
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<td>S0CH 120</td>
<td>Dynamics of Communication</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS
TOTAL: 22–23 CREDITS

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

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

<table>
<thead>
<tr>
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<td>Writing Core Area (See Note 2)</td>
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<td>Science/Technology Core Area (See Note 3)</td>
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</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
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CHOICE 2: Social Science

<table>
<thead>
<tr>
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<tr>
<td>POLS 120</td>
<td>American Political System</td>
</tr>
<tr>
<td>POLS 121</td>
<td>State and Local Government</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
</tbody>
</table>

CHOICE 3: Science/Mathematics (See Note 4)

|            | 4–5 CREDITS |

CHOICE 4: Humanities (See Note 4)

|            | 8 CREDITS |

NOTES
1. CHDV 281 and CHDV 282 must be taken concurrently with departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 281/282. Applications for departmental approval are available in the Human, Health, and Public Service Careers Department, Room 175, Gannon Vocational Technical Center.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students should select a course that also meets MACRAO. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog.
4. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate science/mathematics and humanities courses.
5. Students may also choose from CHDV-prefix courses not already used to meet degree requirements.
6. For graduation, a student must earn a minimum of a 2.0 grade in each CHDV course counted for credit toward the degree.

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

<table>
<thead>
<tr>
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<th>I</th>
<th>II</th>
<th>III</th>
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<td>CHDV 113</td>
<td>CHDV 230</td>
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<td>CHDV 220</td>
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<td>CHDV 281</td>
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<td>WRIT 122</td>
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<td>Lim.Ch.4</td>
<td>Lim.Ch.4</td>
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</table>
## CHILD DEVELOPMENT

### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10133 (Effective Fall 1996–Summer 2001)

The certificate program consists of child development course work. It prepares individuals for positions as assistant teachers in child care programs. Courses for the certificate can be applied toward the associate degree.

### PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

### INFORMATION

Contact the Human, Health, and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
<td>CHDV 101</td>
<td>Child Growth and Development 6-5 years</td>
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<tr>
<td>CHDV 111</td>
<td>Positive Guidance and Communication Skills With Children</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 112</td>
<td>Building Relationships with Families in Child Care</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health and Safety Issues in Child Care</td>
<td>1</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Curriculum and Learning Environments for Preschoolers</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>Infant-Toddler Program Development</td>
<td>3</td>
</tr>
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<td>CHDV 222</td>
<td>School-Age Child Care Program Development</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 230</td>
<td>Child Care Center Administration</td>
<td>2</td>
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<tr>
<td>CHDV 281</td>
<td>Issues in Teaching in Child Care (See Note 1)</td>
<td>3</td>
</tr>
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<td>CHDV 282</td>
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<td>WHIT 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: Professional Related Courses

<table>
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<td>CPR for Health Care Professionals</td>
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<td>EMSB 106</td>
<td>Infant-Child CPR</td>
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<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
<td>2</td>
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<tr>
<td>HUSE 110</td>
<td>Introduction to Child Abuse and Neglect</td>
<td>3</td>
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<tr>
<td>HUSE 120</td>
<td>Introduction to Domestic Violence</td>
<td>2</td>
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<tr>
<td>PSYC 185</td>
<td>Children and Death: Grief and Loss</td>
<td>2</td>
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**MINIMUM TOTAL** 34

### NOTES

1. CHDV 281 and CHDV 282 must be taken concurrently with departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 281-282. Applications for departmental approval are available in the Human, Health, and Public Service Careers Department, Room 175, Gannon Vocational Technical Center.

2. Students may also choose from CHDV-prefer courses not already used to meet degree requirements.

3. For graduation, a minimum of a 2.0 grade must be earned in each CHDV course counted for credit toward the 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.

<table>
<thead>
<tr>
<th>CHDV 101</th>
<th>CHDV 112</th>
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<tbody>
<tr>
<td>CHDV 111</td>
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<td>CHDV 230</td>
<td>WHIT 121</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>WHIT 121</td>
<td>Lim.Ch.</td>
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</tbody>
</table>
GERONTOLOGY
ASSOCIATE IN APPLIED SCIENCE

Curriculum Code: 10171 (Effective Fall 1996–Summer 2001)

This curriculum focuses on the study of the process of aging and the older person’s relationship with society. Individuals trained in gerontology help older adults cope with problems, identify the social services needs of older adults, assist older adults and their families to meet those needs, or assist with the health and wellness needs of older people. Completion of this program will assist in entry-level employment in related jobs, such as senior citizen activity leader, senior housing manager, senior services worker, and outreach worker. Two consecutive semesters of field work in an agency serving older adults is completed during the final year of the program. Not all courses in this program 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 Class Schedule for course prerequisite information. Basic skills assessment and advisement information may be found on page 8 of this catalog.

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

INFORMATION
Contact the Human, Health, and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1416.

REQUIREMENTS

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<tr>
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<td>Introduction to Human Aging</td>
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<td>GER 101</td>
<td>Programs and Services for the Aging</td>
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</tr>
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<td>GER 202</td>
<td>Mental Health and Aging</td>
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<td>GER 204</td>
<td>Aging and Health</td>
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<tr>
<td>GER 282</td>
<td>Gerontology Field Placement I (See Note 1)</td>
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<td>GER 284</td>
<td>Gerontology Field Placement II (See Note 1)</td>
<td>4</td>
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<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
<td>3</td>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
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<td>Introduction to Sociology</td>
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<tr>
<td>SWK 203</td>
<td>Social Work Interviewing Concepts and Skill Practice</td>
<td>3</td>
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<tr>
<td>SPOC 126</td>
<td>Dynamics of Communication</td>
<td>3</td>
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<td>WRIT 121</td>
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<td>WRIT 122</td>
<td>Composition II</td>
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</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 22–23 CREDITS |

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

**CHOICE 1:** General Education Core Areas 3 Credits
(See the GENERAL EDUCATION section above)
Writing Core Area (See Note 2) 0
Speech Communication Core Area (See Note 2) 0
Science/Technology Core Area (See Note 3) 3
Global Perspectives and Diversity Core Area (See Note 2) 0

**CHOICE 2:** Social Science 4 Credits
POLS 120 | American Political System | 4 |
POLN 121 | State and Local Government | 4 |
PSYC 200 | Introduction to Psychology | 4 |

**CHOICE 3:** Science/ Mathematics (See Note 4) 4–5 Credits

**CHOICE 4:** Humanities (See Note 4) 6 Credits

**CHOICE 5:** Professional Related Courses (See Note 5) 3 Credits

MINIMUM TOTAL 63

NOTES
1. There is an application process and guidelines for admission into field placement. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health, and Public Service Careers Department, 175 GVT. Students should contact a program advisor for further information.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students should select a course that also meets MACRAO. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog.
4. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate science/mathematics and humanities courses.
5. Students may choose from any GER 100 prefix courses numbered GER 121–199.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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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GERONTOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10152 (Effective Fall 1996–Summer 2001)
The certificate program consists of courses in aging and human services. It is designed for persons who have achieved a degree and wish to focus their skills in gerontology. It includes two semesters of field placement.

REQUIREMENTS

<table>
<thead>
<tr>
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<tr>
<td>GER 100</td>
<td>Introduction to Human Aging</td>
<td>3</td>
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<td>GER 101</td>
<td>Programs and Services for the Aging</td>
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<td>GER 202</td>
<td>Mental Health and Aging</td>
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<td>GER 204</td>
<td>Aging and Health</td>
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<td>GER 282</td>
<td>Gerontology Field Placement I (See Note 1)</td>
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<td>GER 284</td>
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<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
<td>3</td>
</tr>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
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</tr>
<tr>
<td>SWK 203</td>
<td>Social Work Interviewing Concepts and Skill Practice</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
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</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 3 CREDITS |

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

**CHOICE 1:** Professional Related Courses (See Note 2) 3 Credits

MINIMUM TOTAL 30

NOTES
1. There is an application process and guidelines for admission into field placement. Field placement applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health, and Public Service Careers Department, 175 GVT. See a program advisor for further information.
2. Students may choose from any GER 100 prefix courses numbered GER 121–199.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
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<td>GER 282</td>
<td>GER 264</td>
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LANSDING COMMUNITY COLLEGE CATALOG 1996–97 II 107
### HUMAN SERVICES, GENERAL
#### ASSOCIATE IN APPLIED SCIENCE

**Curriculum Code:** 10228 (Effective Fall 1996-Summer 2001)

Human services workers are a generic term for an individual who works in various social service agencies assisting professional staff, such as social workers and psychologists, to meet human needs, including helping clients obtain services, monitoring and keeping records, organizing or leading group activities, assisting clients in mastering everyday living skills, and overseeing adult group home residents. Job titles and duties vary according to the setting and type of clients served. Two semesters of field experience in a Human Services Agency is completed during the last year of the program. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

#### PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 of this catalog.

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

#### INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

#### REQUIREMENTS

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<thead>
<tr>
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<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
<td>2</td>
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<td>HUSE 202</td>
<td>Human Services Practicum I: Organizational Systems (See Note 1)</td>
<td>4</td>
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<td>HUSE 204</td>
<td>Human Services Practicum II: Service Delivery Skills (See Note 1)</td>
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<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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<td>SOCL 254</td>
<td>Marriage and Family</td>
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<td>Minority Groups</td>
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<td>Social Work Interviewing: Concepts and Skills Practice</td>
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<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<td>WRIT 121</td>
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<td>WRIT 122</td>
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**LIMITED CHOICE REQUIREMENTS**

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<td>WRIT 122</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Lim.Chr.5</td>
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</table>

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

1. **CHOICE 1:** General Education Core Areas 3 Credits
   - Writing Core Area (See Note 2)
   - Speech Communication Core Area (See Note 2)
   - Science/Technology Core Area (See Note 3)
   - Global Perspectives and Diversity Core Area (See Note 2)

2. **CHOICE 2:** Social Science 4 Credits
   - POLS 100: American Political System
   - POLS 121: State and Local Government
   - PSYC 200: Introduction to Psychology

3. **CHOICE 3:** Science/Mathematics (See Note 4) 4-5 Credits

4. **CHOICE 4:** Humanities (See Note 4) 8 Credits

#### NOTES
1. There is an application process and guidelines for admission into the field placement component. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health, and Public Service Careers Department, 175 GVT. See a program advisor for further information.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students should select a course that also meets MACRAO. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog.
4. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate science/mathematics and humanities courses.
5. Students may also choose from any GERD-prefix courses and/or any HUSE-prefix courses (except HUSE 286 and HUSE 288), not already used to meet degree requirements.

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

Curriculum Code: 10220 (Effective Fall 1996-Summer 2001)

Substance Abuse workers with an associate degree assist social workers or psychologists in agencies focusing on substance abuse. Graduates may be employed in private clinics, public or community agencies, or work-site programs specializing in substance abuse treatment and prevention. Additional education is needed for advanced positions. Individuals wishing to do counseling should be certified as a certified addiction counselor through the Michigan Office of Substance Abuse Services. Two semesters of field work in a substance abuse agency are included in the program. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Human, Health, and Public Service Careers Department, Gannon Vocational Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

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<thead>
<tr>
<th>Course</th>
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<td>Introduction to Human Services: Resources and Interventions</td>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
<td>3</td>
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<td>HUSE 112</td>
<td>Introduction to Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 240</td>
<td>Substance Abuse: Special Populations and Adolescent Addiction</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 241</td>
<td>Substance Abuse Prevention and Intervention</td>
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<td>HUSE 242</td>
<td>The Chemically Dependent Family</td>
<td>3</td>
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<tr>
<td>HUSE 244</td>
<td>Substance Abuse Agencies, Treatment, Addiction Patterns</td>
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</tr>
<tr>
<td>HUSE 286</td>
<td>Substance Abuse Practicum I/Organizational Systems (See Note 1)</td>
<td>4</td>
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<tr>
<td>HUSE 288</td>
<td>Substance Abuse Practicum II/Service Delivery Skills (See Note 1)</td>
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<tr>
<td>SOC1 120</td>
<td>Introduction to Sociology</td>
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<td>SOWK 203</td>
<td>Social Work Interviewing: Concepts and Skill Practice</td>
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<td>Dynamics of Communication</td>
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LIMITED CHOICE REQUIREMENTS

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<td>Speech Communication Core Area (See Note 2)</td>
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<tr>
<td>Science/Technology Core Area (See Note 3)</td>
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<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
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<tr>
<td>Social Science</td>
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<td>POLS 120</td>
<td>American Political System</td>
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<td>POLS 121</td>
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<td>PSYC 200</td>
<td>Introduction to Psychology</td>
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<tr>
<td>Science/Mathematics (See Note 4)</td>
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<td>Humanities (See Note 4)</td>
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MINIMUM TOTAL 65

NOTES
1. There is an application process and guidelines for admission into the field placement component. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health, and Public Service Careers Department, Room 175, Gannon Vocational Technical Center. See a program advisor for further information.

SUGGESTED COURSE SEQUENCE

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<td>HUSE 286</td>
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<td>WRIT 121</td>
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<td>SOWK 203</td>
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<td>WRIT 122</td>
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CURRICULUM CODE: 10239 (Effective Fall 1996-Summer 2001)

A substance abuse worker is an individual with specialized knowledge and skills in the area of substance abuse, including its causes, treatment, and prevention strategies. The certificate is designed for individuals with prior degrees. Two semesters of field work are required.

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
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<tr>
<td>HUSE 112</td>
<td>Introduction to Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 240</td>
<td>Substance Abuse: Special Populations and Adolescent Addiction</td>
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<td>HUSE 241</td>
<td>Substance Abuse Prevention and Intervention</td>
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<td>HUSE 242</td>
<td>The Chemically Dependent Family</td>
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<td>HUSE 244</td>
<td>Substance Abuse Agencies, Treatment, Addiction Patterns</td>
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<td>HUSE 286</td>
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<td>WRIT 121</td>
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MINIMUM TOTAL 35

NOTES
1. There is an application process and guidelines for admission into the field placement component. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health, and Public Service Careers Department, Room 175, Gannon Vocational Technical Center. See a program advisor for further information.

SUGGESTED COURSE SEQUENCE

<table>
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<td>HUSE 286</td>
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LANSING COMMUNITY COLLEGE CATALOG 1996-97 109
**COMPUTERIZED NUMERICAL CONTROL PROGRAMMER ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10265 (Effective Fall 1996–Summer 2001)

Computer numerical control programmers are responsible for writing programs that are used to control automated manufacturing systems and equipment. The programmer is primarily concerned with taking engineering specifications and developing procedures and programmed instructions to manufacture requested components. The CNC programmer must be knowledgeable in many areas such as computer systems, CAD, CAM, manufacturing processes, machine tools, and metallurgy. Strong math, communication, and problem-solving skills are needed in order to manage the large and diverse amount of information that must be brought together in order to successfully write programs. Because of their many skills, CNC programmers are employed in all industries, including aerospace, textile, agriculture, electronics, and manufacturing.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

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

<table>
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<td>C110 Foundations of CNC Programming</td>
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<tr>
<td>C130 Machine Controls and Set-up</td>
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<tr>
<td>C200 Unigraphics NC</td>
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<td>C210 SMART-CAM</td>
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<td>C215 CAMANO</td>
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<td>DTDS 110 Unigraphics</td>
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<td>MA110 Machine Tool Technology I (See Note 1)</td>
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<tr>
<td>MAH 120 Effective Use of Machinist's Handbook</td>
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<td>MAH 135 Metallurgy and Heat Treat</td>
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<td>MAH 140 Tooling Theory and Practices</td>
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<td>MAH 114 Technical Math I</td>
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<td>MAH 115 Technical Math II</td>
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<tr>
<td>WR1 124 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

(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

**CHOICE 2:** Drafting Technology

| DTDS 101 Drafting I | 4 |
| DTDS 104 Descriptive Geometry | 4 |
| DTDS 110 Industrial Blueprint Reading | 3 |
| DTDS 131 AutoCAD Basic 2-D | 4 |

**MINIMUM TOTAL**

70

NOTES

1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the preparation for MACH 100 can be waived.

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

**SUGGESTED COURSE SEQUENCE**

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

Curriculum Code: 10110 (Effective Fall 1996-Summer 2001)

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 trades.

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

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 220, telephone number (517) 485-1336.

REQUIREMENTS

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<td>DTDS 101 Drafting I</td>
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<tr>
<td>DTDS 110 Industrial Blueprint Reading</td>
<td>3</td>
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<tr>
<td>HVAC 116 Applied Electricity I</td>
<td>2</td>
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<tr>
<td>MACH 102 Manufacturing Processes</td>
<td>4</td>
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<tr>
<td>MACH 105 Machine Tool Survey</td>
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<td>MACH 120 Effective Use of Machinery's Handbook</td>
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<td>MACH 135 Metallurgy and Heat Treat</td>
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<td>MATH 114 Technical Math I</td>
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<tr>
<td>MATH 115 Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 101 Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 200 Applied Physics</td>
<td>4</td>
</tr>
<tr>
<td>SAFE 110 Safe Practices and First Aid</td>
<td>3</td>
</tr>
<tr>
<td>WELD 100 Combination Welding</td>
<td>4</td>
</tr>
<tr>
<td>WHIT 124 Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 13 CREDITS</th>
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<tbody>
<tr>
<td>CNOE 110 Foundations of CNC Programming</td>
<td>9 Credits</td>
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<tr>
<td>DTDS 101 Drafting I</td>
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<tr>
<td>DTDS 110 Industrial Blueprint Reading</td>
<td></td>
</tr>
<tr>
<td>HVAC 116 Applied Electricity I</td>
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</tr>
<tr>
<td>MACH 102 Manufacturing Processes</td>
<td></td>
</tr>
<tr>
<td>MACH 105 Machine Tool Survey</td>
<td></td>
</tr>
<tr>
<td>MACH 120 Effective Use of Machinery's Handbook</td>
<td></td>
</tr>
<tr>
<td>MACH 135 Metallurgy and Heat Treat</td>
<td></td>
</tr>
<tr>
<td>MATH 114 Technical Math I</td>
<td></td>
</tr>
<tr>
<td>MATH 115 Technical Math II</td>
<td></td>
</tr>
<tr>
<td>MFGM 101 Industrial Hydraulics</td>
<td></td>
</tr>
<tr>
<td>PHYS 200 Applied Physics</td>
<td></td>
</tr>
<tr>
<td>SAFE 110 Safe Practices and First Aid</td>
<td></td>
</tr>
<tr>
<td>WELD 100 Combination Welding</td>
<td></td>
</tr>
<tr>
<td>WHIT 124 Technical Writing</td>
<td></td>
</tr>
</tbody>
</table>

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>COURSE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 101</td>
<td>Industrial Blueprint Reading</td>
</tr>
<tr>
<td>MACH 102</td>
<td>Manufacturing Processes</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery's Handbook</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
</tr>
<tr>
<td>WHIT 124</td>
<td>Technical Writing</td>
</tr>
</tbody>
</table>

INDUSTRIAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10150 (Effective Fall 1996-Summer 2001)

This certificate provides students with a basic understanding of a variety of technologies to enhance the theory skills they already possess.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 33 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
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<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery's Handbook</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
</tr>
<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 33

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</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 120</td>
<td>Effective Use of Machinery's Handbook</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
</tr>
<tr>
<td>WHIT 124</td>
<td>Technical Writing</td>
</tr>
</tbody>
</table>

LANSING COMMUNITY COLLEGE CATALOG 1996-97 111
MACHINE MAINTENANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10173 (Effective Fall 1996–Summer 2001)

Machine maintenance technicians are involved with the repair, maintenance, and installation of industrial equipment. They repair the machinery of industry, solving mechanical problems. The skills necessary for this type of work are many and varied: critical thinking, problem solving, mechanics, math, and physics are but a few. Maintenance technicians also need to know how to diagnose hydraulic problems, perform preventive maintenance procedures, and be able to work well with others. Every industrial plant will have one or more machine maintenance technicians. They may have different titles, but the work is the same.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>DTDS 101</td>
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<td>4</td>
</tr>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery's Handbook</td>
<td>4</td>
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<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td>4</td>
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<tr>
<td>MFGM 111</td>
<td>Machine Maintenance II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 120</td>
<td>Industrial Presses</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</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>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>Writing Core Area (See Note 2)</td>
<td>3</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
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</table>

CHOICE 2: Electrical Technology

<table>
<thead>
<tr>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>ELTE 110</td>
<td>Practical Electricity</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
</tr>
</tbody>
</table>

CHOICE 3: Technical Related

<table>
<thead>
<tr>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
</tr>
<tr>
<td>MFGM 102</td>
<td>Industrial Pneumatics</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
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</tbody>
</table>

CHOICE 4: Mathematics and Physics

<table>
<thead>
<tr>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
</tr>
<tr>
<td>PHYS 200</td>
<td>Applied Physics</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 47 CREDITS

NOTES

1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the prerequisite for MACH 110 can be waived.

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>CODE</th>
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<td>DTDS 101</td>
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<td>DTDS 110</td>
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<td>MACH 110</td>
<td>1</td>
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<td>MACH 111</td>
<td>1</td>
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<td>MACH 120</td>
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<tr>
<td>MACH 135</td>
<td>1</td>
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<tr>
<td>MFGM 101</td>
<td>1</td>
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<td>MFGM 110</td>
<td>1</td>
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<tr>
<td>MFGM 111</td>
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<tr>
<td>MFGM 120</td>
<td>1</td>
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<tr>
<td>SAFE 110</td>
<td>1</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>1</td>
</tr>
</tbody>
</table>

MACHINE REPAIR

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10147 (Effective Fall 1996–Summer 2001)

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.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 111</td>
<td>Machine Maintenance II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
<td>3</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
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</table>

MINIMUM TOTAL: 31 CREDITS

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>DTDS 110</td>
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<td>MACH 105</td>
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<td>MACH 120</td>
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<td>MACH 135</td>
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<td>MFGM 101</td>
<td>1</td>
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<td>MFGM 110</td>
<td>1</td>
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<td>MFGM 111</td>
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<tr>
<td>WELD 100</td>
<td>1</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>1</td>
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</table>

MINIMUM TOTAL: 69 CREDITS
### MILLWRIGHT
#### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10154 (Effective Fall 1996–Summer 2001)

A millwright installs, maintains, and cares for mechanical equipment in a plant, factory, or mill. This program prepares an individual for an entry-level position.

#### PREREQUISITES

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

#### INFORMATION

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

#### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>BLDT 103</td>
<td>Structural Print Reading</td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 111</td>
<td>Machine Maintenance II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 32 CREDITS**

#### LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CHOICE 1: Building Related</th>
<th>3–4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL: 35 CREDITS**

#### SUGGESTED COURSE SEQUENCE

1. **MACH 105**
2. **BLDT 103**
3. **MFGM 111**
4. **MATH 114**
5. **MACH 135**
6. **MFGM 101**
7. **SAFE 110**
8. **MFGM 125**
### Machinist Toolmaker
**Associate in Applied Science Degree**

**Curriculum Code:** 10199 (Effective Fall 1996–Summer 2001)

A machinist toolmaker is involved with the manufacture of machined components relating to various kinds of industry. There are no limits to the variety of projects a machinist toolmaker may be involved with: making prototypes, tools for production, engineering changes on parts, etc. This work involves critical thinking, decision-making, math skills, and working cooperatively with others. Machinist toolmakers are capable of operating all the various machine tools in a machine shop. They also must be able to interpret mechanical drawings, calculate mathematical data, and work with others to solve the various problems related to projects going on in the shop at any given time. A machinist toolmaker may be employed in any manufacturing facility.

**Prerequisites**

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

**General Education**

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

**Information**

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</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 101</td>
<td>Drafting I</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
<td>4</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery’s Handbook</td>
<td>4</td>
</tr>
<tr>
<td>MACH 130</td>
<td>Die Construction</td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
<td>4</td>
</tr>
<tr>
<td>MACH 210</td>
<td>Principles of Electric Discharge Machining (EDM)</td>
<td>4</td>
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<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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</tbody>
</table>

**Limited Choice Requirements**

Total: 21 Credits

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

**Choice 1:** General Education Core Areas

- Writing Core Area (see Note 2) 0
- Speech Communication Core Area 3
- Science/Technology Core Area 3
- Global Perspectives and Diversity Core Area 3

**Choice 2:** Mathematics and Physics

- MATH 114 Technical Math I 4
- MATH 115 Technical Math II 4
- MATH 116 Technical Math III 4
- PHYS 220 Applied Physics 4

**Minimum Total:** 73

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### Tool and Die Maker
**Certificate of Achievement**

**Curriculum Code:** 10141 (Effective Fall 1996–Summer 2001)

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
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</tr>
<tr>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
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<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery’s Handbook</td>
<td>4</td>
</tr>
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<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
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<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
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<td>MATH 114</td>
<td>Technical Math I</td>
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</tr>
<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
<td>3</td>
</tr>
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</table>

**Minimum Total:** 34

**Notes**

1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the prerequisite for MACH 110 can be waived.

**Suggested Course Sequence**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
<td>4</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery's Handbook</td>
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<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
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<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
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<td>MATH 114</td>
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<tr>
<td>SAFE 110</td>
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WELDING TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10156 (Effective Fall 1996 – Summer 2001)

Welding is many processes of fusion, adhesion, and cutting to fabricate or repair products used in manufacturing, research, and application. A welding technician could also qualify for welding inspection where welding codes are applied. A welder is a skilled craftsperson with a basic knowledge of metals, applied mathematics, blueprint reading, good eyesight, self-discipline, and a respect for safety. A welder also needs to work well with his/her hands and have good manual coordination. Many hours of practice and proper training in the basics of MIG, TIG, shielded metal arc, brazing and oxy-fuel cutting, and plasma cutting are necessary. Welders can be found in tool and die industries, auto makers, construction, oil refineries, pipelines and pressure vessels, aircraft industries, and many more metal-related industries.

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

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
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<tr>
<td>MACH 133</td>
<td>Metallurgy and Heat Treating</td>
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<tr>
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<td>WELD 100</td>
<td>Arc Welding</td>
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<tr>
<td>WELD 101</td>
<td>Gas Metal Arc Welding</td>
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<td>WELD 111</td>
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<tr>
<td>WELD 120</td>
<td>Structural Fabrication and Inspection</td>
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<td>WELD 205</td>
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<tr>
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<td>Technical Writing</td>
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TOTAL: 45 CREDITS

LIMITED CHOICE REQUIREMENTS

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TOTAL: 15-16 CREDITS

SUGGESTED COURSE SEQUENCE

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

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<tr>
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MINIMUM TOTAL: 31 CREDITS

SUGGESTED COURSE SEQUENCE

Students receive hands-on instruction in the basics of MIG, TIG, shielded metal arc, brazing and oxy-fuel cutting, and plasma cutting to prepare them for entry level positions.

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MINIMUM TOTAL: 31 CREDITS

SUGGESTED COURSE SEQUENCE

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MINIMUM TOTAL: 31 CREDITS

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MINIMUM TOTAL: 31 CREDITS

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MINIMUM TOTAL: 31 CREDITS

SUGGESTED COURSE SEQUENCE

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<td>WELD 125</td>
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<tr>
<td>WELD 125</td>
<td>Structural Blueprint Reading for Welders</td>
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MINIMUM TOTAL: 31 CREDITS
INTERIOR DESIGN ASSISTANT, PRE-PROFESSIONAL ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10287 (Effective Fall 1996–Summer 2001)

Interior design assistants work with professional interior designers to plan and create the overall design for interior spaces. They may be employed as estimators, retail sales persons, planners, computer-aided drafting and design technicians, lighting and color consultants, or kitchen/bath designers. Depending on their specialty, interior design assistants work in retail or wholesale showrooms, design firms, building construction management offices, hospitality chains, interior furnishings manufacturers, or facilities departments. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

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<td>INTR 110</td>
<td>Applied Design, Two-Dimensional and Color</td>
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<td>INTR 151</td>
<td>Computer-Aided Kitchen Design</td>
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<tr>
<td>INTR 170</td>
<td>Introduction to Interiors</td>
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<td>INTR 175</td>
<td>Space Planning and Design Process</td>
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<td>INTR 190</td>
<td>Materials for Interiors</td>
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<td>INTR 222</td>
<td>Computer-Add Drafting and Design for Interiors</td>
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<tr>
<td>INTR 225</td>
<td>Computer-Add Design for Space Planning</td>
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<td>INTR 232</td>
<td>Twentieth Century Design</td>
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<td>INTR 240</td>
<td>Interior Lighting</td>
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<td>INTR 245</td>
<td>Residential Interiors</td>
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<td>INTR 248</td>
<td>Non-Residential Interiors, Systems Furniture</td>
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<tr>
<td>INTR 252</td>
<td>Construction Documents and Specifications</td>
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<tr>
<td>INTR 256</td>
<td>Interior Design Project Management</td>
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LIMITED CHOICE REQUIREMENTS

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<td>Speech Communication Core Area</td>
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<td>Science/Technology Core Area</td>
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<td>Global Perspectives and Diversity Core Area</td>
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<tr>
<td>CHOICE 2: History</td>
<td>3 Credits</td>
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<tr>
<td>ARCH 141</td>
<td>Architectural History I</td>
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<tr>
<td>ARCH 142</td>
<td>Architectural History II</td>
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<tr>
<td>INTR 230</td>
<td>World Decorative Arts</td>
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<td>INTR 231</td>
<td>Interior Design Period Research</td>
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<td>ARCH 121</td>
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<tr>
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<td>Visual Communication II</td>
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<td>INTR 122</td>
<td>Design Presentation Techniques</td>
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<td>Design Portfolio</td>
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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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MINIMUM TOTAL: 70
HORTICULTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10189 (Effective Fall 1996–Summer 2001)

A professional horticulturist deals with plant materials, their growth, development, propagation, marketing, and use. The horticulturist works with environmental conditions and pest problems of ornamental plants and their management. The two major specialty areas are landscape horticulture and floriculture. A background in plant maintenance, knowledge of growing environments and structures, as well as retail and marketing skills, is vital. Horticulturists are employed by florists, greenhouses and garden centers, nurseries, retail sales outlets, landscape contractors, design and construction firms, and lawn care companies. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see the Course Descriptions section of the catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

GENERAL EDUCATION

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

INFORMATION

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<td>Introduction to Ornamental Horticulture</td>
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<td>Pests and Problems of Ornamental Plants</td>
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<td>Plant Propagation and Nursery Operations</td>
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<td>Greenhouse Structures and Environment</td>
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<td>LAND 100</td>
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<td>LAND 130</td>
<td>Interior Landscaping</td>
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<tr>
<td>LAND 140</td>
<td>Evergreen and Deciduous Trees</td>
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<td>LAND 141</td>
<td>Flowering Trees, Shrubs, Ground Covers</td>
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<td>LAND 142</td>
<td>Perennial and Annual Flowering Plants</td>
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<td>LAND 163</td>
<td>Designing Ornamental Garden</td>
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<td>LAND 282</td>
<td>Microcomputers in Landscape Planning</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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Complete the indicated number of credits from each CHOICE listed below.

**CHOICE 1:** General Education Core Areas

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<td>Global Perspectives and Diversity Core Area</td>
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**CHOICE 2:** Specialization (Choose 1 Subchoice)

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<td>HORT 110</td>
<td>Wedding Floral Design</td>
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<tr>
<td>HORT 143</td>
<td>Cut Flower, Foliage, and Potted Plant Identification</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>HORT 236</td>
<td>Greenhouse Ornamentals</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HORT 237</td>
<td>Bedding Plant Production</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HORT 238</td>
<td>Garden Center and Nursery Sales Management</td>
<td>3</td>
<td></td>
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</table>

Subchoice 2B Landscape Horticulture

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>LAND 150</td>
<td>Principles of Landscape Architecture</td>
<td>3</td>
<td></td>
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<tr>
<td>LAND 160</td>
<td>Planting Design I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 180</td>
<td>Landscape Ecology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 185</td>
<td>Arboriculture (Urban Forestry)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 225</td>
<td>Landscape Cost Estimation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 232</td>
<td>Professional Residential Landscape Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 233</td>
<td>Grounds Management</td>
<td>3</td>
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**MINIMUM TOTAL:**

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<tr>
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<tbody>
<tr>
<td><strong>TOTAL:</strong></td>
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<td>62</td>
</tr>
</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>
<th>CODE</th>
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<th>CREDITS</th>
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<tr>
<td><strong>FACULTY ADVISORY COMMITTEE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUGGESTED COURSE SEQUENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HORT 102</td>
<td>HORT 105</td>
<td>HORT 110</td>
</tr>
<tr>
<td>HORT 107</td>
<td>HORT 109</td>
<td>HORT 237</td>
</tr>
<tr>
<td>HORT 143</td>
<td>HORT 236</td>
<td>LAND 130</td>
</tr>
<tr>
<td>HORT 255</td>
<td>LAND 141</td>
<td>LAND 142</td>
</tr>
<tr>
<td>LAND 100</td>
<td>WRIT 124</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>LAND 146</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
<tr>
<td><strong>LAYOUT:</strong></td>
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</table>

**LANDSCAPE CAREERS**

LANSING COMMUNITY COLLEGE CATALOG 1996–97
LANDSCAPE CAREERS

1996-1997 Catalog Lansing Community College

LANDSCAPE ARCHITECTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10203 (Effective Fall 1996 - Summer 2001)

Landscape architects, designers, and planners deal with the ecological design and management of the land. Landscape architects and designers coordinate the analysis, planning, layout, design, and management of the exterior and interior landscape. Landscape architects and designers are employed by design and engineering firms, parks and recreation offices, landscape contractors, design and build firms, nurseries and garden centers, arboreta and botanic gardens, and grounds management firms. A supporting background in computer design graphics and G.I.S. is helpful. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Technology Careers Department, Gamma Vocational Technical Center, Room 206, telephone number (517) 483-1536.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>LAND 100</td>
<td>Introduction to Landscape Drafting</td>
<td>2</td>
</tr>
<tr>
<td>LAND 143</td>
<td>Evergreen and Deciduous Trees</td>
<td>3</td>
</tr>
<tr>
<td>LAND 144</td>
<td>Flowering Trees, Shrubs, Ground Covers</td>
<td>3</td>
</tr>
<tr>
<td>LAND 150</td>
<td>Principles of Landscape Architecture</td>
<td>3</td>
</tr>
<tr>
<td>LAND 152</td>
<td>Landscape Graphics Communications Beginning</td>
<td>3</td>
</tr>
<tr>
<td>LAND 153</td>
<td>Landscape Graphics Communications Advanced</td>
<td>3</td>
</tr>
<tr>
<td>LAND 160</td>
<td>Planting Design I</td>
<td>3</td>
</tr>
<tr>
<td>LAND 161</td>
<td>Planting Design II</td>
<td>3</td>
</tr>
<tr>
<td>LAND 164</td>
<td>Site Design I</td>
<td>3</td>
</tr>
<tr>
<td>LAND 170</td>
<td>Site Grading I</td>
<td>3</td>
</tr>
<tr>
<td>LAND 171</td>
<td>Site Grading II</td>
<td>3</td>
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<tr>
<td>LAND 172</td>
<td>Site Layout</td>
<td>3</td>
</tr>
<tr>
<td>LAND 225</td>
<td>Landscape Cost Estimation</td>
<td>3</td>
</tr>
<tr>
<td>LAND 232</td>
<td>Professional Residential Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>LAND 233</td>
<td>Grounds Management</td>
<td>3</td>
</tr>
<tr>
<td>LAND 250</td>
<td>Landscape Construction Methods</td>
<td>3</td>
</tr>
<tr>
<td>LAND 252</td>
<td>Landscape Construction Details</td>
<td>3</td>
</tr>
<tr>
<td>LAND 276</td>
<td>Landscape Documents and Specifications</td>
<td>2</td>
</tr>
<tr>
<td>LAND 282</td>
<td>Microcomputers in Landscape Planning</td>
<td>3</td>
</tr>
<tr>
<td>LAND 283</td>
<td>Beginning LAND/CADD</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>TOTAL CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:</td>
<td>9 Credits</td>
</tr>
<tr>
<td>(See the GENERAL EDUCATION section above)</td>
<td></td>
</tr>
<tr>
<td>Writing Core Area (See Note 2)</td>
<td>3</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

70

NOTES

1. If students have prior experience in drafting, they should see an academic advisor in the Technology Careers Department to see if LAND 100 can be waived.

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>LAND 100</th>
<th>LAND 141</th>
<th>LAND 161</th>
<th>LAND 171</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAND 143</td>
<td>LAND 153</td>
<td>LAND 170</td>
<td>LAND 172</td>
</tr>
<tr>
<td>LAND 150</td>
<td>LAND 160</td>
<td>LAND 232</td>
<td>LAND 233</td>
</tr>
<tr>
<td>LAND 152</td>
<td>LAND 164</td>
<td>LAND 282</td>
<td>LAND 283</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>LAND 283</td>
<td>LAND 252</td>
<td>LAND 276</td>
</tr>
</tbody>
</table>
LEGAL ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10101 (Effective Fall 1996–Summer 2001)

Legal assistants, also known as paralegals, assist lawyers by performing many of the same tasks, except for those considered to be the practice of law. To help lawyers prepare cases for trial, they may investigate the facts, perform legal research to identify relevant laws, legal articles, judicial decisions and other documents/materials related to the case; and prepare written reports after analyzing all the information. Other duties may include drafting briefs and pleadings, obtaining affidavits, assisting the lawyer during trial, and organizing and maintaining document and correspondence files. Some legal assistants may help with completing forms, tax returns, and drafting contracts.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TOTAL: 32 CREDITS</th>
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<tbody>
<tr>
<td>LEGL 115</td>
<td>Legal Assistant Career and Ethics</td>
</tr>
<tr>
<td>LEGL 120</td>
<td>Legal Research I</td>
</tr>
<tr>
<td>LEGL 121</td>
<td>Legal Writing I</td>
</tr>
<tr>
<td>LEGL 160</td>
<td>Critical Thinking in Law</td>
</tr>
<tr>
<td>LEGL 210</td>
<td>Litigation Procedures</td>
</tr>
<tr>
<td>LEGL 211</td>
<td>Tort Law</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I: Basic Principles</td>
</tr>
<tr>
<td>LEGL 225</td>
<td>Legal Research and Writing II</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</td>
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</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>COURSE</th>
<th>TOTAL: 28–29 CREDITS</th>
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<tbody>
<tr>
<td>LEGL 115</td>
<td>LEGL 120</td>
</tr>
<tr>
<td>LEGL 160</td>
<td>WRIT 122</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Lim.Ch.</td>
</tr>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</table>

CHOICE 2: Business Law

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>LEGL 216</td>
<td>Business Law II, Commercial Law</td>
</tr>
<tr>
<td>LEGL 217</td>
<td>Business Law III, Business Organizations</td>
</tr>
<tr>
<td>LEGL 220</td>
<td>International Legal Issues and Organizations</td>
</tr>
</tbody>
</table>

CHOICE 3: General Law

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>CJSU 103</td>
<td>Criminal Law</td>
</tr>
<tr>
<td>LEGL 219</td>
<td>Litigation Spec</td>
</tr>
<tr>
<td>LEGL 221</td>
<td>Real Estate Transaction</td>
</tr>
<tr>
<td>LEGL 222</td>
<td>Probate Law and Procedure</td>
</tr>
<tr>
<td>LEGL 223</td>
<td>Domestic Relations</td>
</tr>
<tr>
<td>LEGL 224</td>
<td>Administrative Law</td>
</tr>
<tr>
<td>LEGL 226</td>
<td>Legal Interviewing and Investigation</td>
</tr>
<tr>
<td>LEGL 227</td>
<td>Bankruptcy and Collections</td>
</tr>
<tr>
<td>LEGL 290</td>
<td>Legal Assistant Internship</td>
</tr>
</tbody>
</table>
LEGAL ASSISTANT POST-BACCALAUREATE
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10744 (Effective Fall 1996–Summer 2001)

The legal assistant career is an excellent choice for students possessing a bachelor's degree, especially students with strong analytical and writing skills. These students may select the following certificate curriculum which requires only legal assistant courses.

PREREQUISITES

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>LEGL 115</td>
<td>Legal Assistant Career and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 120</td>
<td>Legal Research I (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>
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</tr>
<tr>
<td>LEGL 211</td>
<td>Torts (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>
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</tbody>
</table>

TOTAL: 21 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Business Law

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<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 Organizations</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 220</td>
<td>International Legal Issues and Organizations</td>
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TOTAL: 12 CREDITS

MINIMUM TOTAL 33

CHOICE 2: General Law

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>CJUS 193</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<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 225</td>
<td>Legal Interviewing and 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 Technology for Legal Assistants</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 290</td>
<td>Legal Assistant Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 33

NOTES

1. Students in this curriculum will be granted department approval to take these courses concurrently with LEGL 115 and LEGL 215. Contact the Business Careers Department, telephone number (517) 483-1522.

2. Students following this curriculum must have proof of a bachelor's degree entered on their official Lansing Community College transcript before a certificate of achievement may be granted. Students who do not possess a bachelor's degree should follow the Legal Assistant Associate in Business Degree curriculum #10101.
HUMAN RESOURCE MANAGEMENT ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10712 (Effective Fall 1996-Summer 2001)

Human resource managers serve as a link between management and employees. They help management make effective use of employees' skills and help employees find satisfaction in their jobs and working conditions. Graduates of this program are involved with recording and evaluating information, such as job experiences, 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 collecting and analyzing labor market data. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS       TOTAL: 44 CREDITS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CISB 206</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LABP 204</td>
<td>Employment Law for Managers</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 223</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 227</td>
<td>Training and Development for Business</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 229</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 232</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 - A Domestic and Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 237</td>
<td>Introduction to Total Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS       TOTAL: 16-19 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 1) 6 Credits

(See the GENERAL EDUCATION section above)

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

CHOICE 2: Specialty Related (See Note 2) 11-13 Credits

- BUSN 191 | Independent Study in Management | 1 |
- BUSN 192 | Independent Study in Management | 2 |
- BUSN 193 | Independent Study in Management | 3 |
- BUSN 229 | Public Relations                | 2 |
- LEGL 215 | Business Law I: Basic Principles | 3 |
- MGMT 239 | Time and Stress Management      | 3 |
- MGMT 240 | Management Internship           | 3 |
- MGMT 244 | Organizational Development      | 3 |
- MGMT 259 | Advanced Management Communication Skills | 3 |
- MGMT 337 | Human Resource Management Skills | 3 |
- MKTG 100 | Current Issues in Business      | 3 |
- MKTG 119 | Marketing and Managing Your Professional Image | 3 |
- PSYC 200 | Introduction to Psychology      | 4 |

CHOICE 3: Computer Related (See Note 3) 2 Credits

- ACCG 103 | Practical Accounting for Non-Majors | 3 |
- ACCG 109 | Accounting Information for Management | 3 |
- ACCG 210 | Principles of Accounting I       | 4 |
- MATH 117 | Math for Business                | 4 |
- MGMT 355 | Managerial Statistics            | 3 |
- MGMT 346 | Managerial Finance               | 3 |

MINIMUM TOTAL 66

NOTES

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

2. Students may also choose from courses with a LABR prefix not already used to meet degree requirements and/or a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 277).

3. Choose a CABS prefix course 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 enrollments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>MGMT 224</td>
<td>LABR 266</td>
<td>MGMT 227</td>
</tr>
<tr>
<td>CISB 200</td>
<td>MGMT 229</td>
<td>MGMT 209</td>
<td>MGMT 229</td>
</tr>
<tr>
<td>LABP 204</td>
<td>MGMT 225</td>
<td>MGMT 225</td>
<td>MGMT 227</td>
</tr>
<tr>
<td>MGMT 234</td>
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</table>
### LABOR RELATIONS

#### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10185 (Effective Fall 1996–Summer 2001)

Specialists in both employee services and problem solving, personnel/labor relations managers are involved in implementing an organization's personnel policies, procedures, and staffing. LCC graduates of this program are prepared to work in a variety of larger businesses and organizations, including labor unions and government agencies. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

Students should see the **Course Descriptions** section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

**GENERAL EDUCATION**

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

**INFORMATION**

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

---

#### REQUIREMENTS

<table>
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<tr>
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<td>3</td>
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<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>LABR 200</td>
<td>Introduction to Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>LABR 201</td>
<td>Collective Bargaining</td>
<td>3</td>
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<td>LABR 202</td>
<td>Grievances and Arbitration</td>
<td>3</td>
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<td>LABR 203</td>
<td>Labor Law</td>
<td>3</td>
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<td>LABR 204</td>
<td>Employment Law for Managers</td>
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<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
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<td>MGMT 222</td>
<td>Supervision</td>
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<td>MGMT 224</td>
<td>Human Resource Management</td>
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<td>MGMT 228</td>
<td>Organizational Behavior</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
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**LIMITED CHOICE REQUIREMENTS**

**TOTAL: 15–16 CREDITS**

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

**CHOICE 1:** General Education Core Areas (See Note 1) 0 Credits (See the **GENERAL EDUCATION** section above)

- Writing Core Area 0
- Speech Communication Core Area 0
- Science/Technology Core Area 0
- Global Perspectives and Diversity Core Area 0

**CHOICE 2:** Accounting 3–4 Credits

- ACGG 210 Principles of Accounting I 4

### SUGGESTED COURSE SEQUENCE

#### MINIMUM TOTAL

60

**NOTES**

1. Students completing **REQUIREMENTS** have fulfilled the requirements for these Core areas.
2. Students may also choose a maximum of 4 credits total from the T.I.M.E. Series (course codes MGMT 240–MGMT 277).

#### SUGGESTED COURSE SEQUENCE

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

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### LABOR RELATIONS

#### CERTIFICATE OF COMPLETION

Curriculum Code: 10256 (Effective Fall 1996–Summer 2001)

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

#### REQUIREMENTS

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<td>LABR 202</td>
<td>Grievances and Arbitration</td>
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**MINIMUM TOTAL**

15

#### SUGGESTED COURSE SEQUENCE

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</table>
MANAGEMENT

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10245 (Effective Fall 1996–Summer 2001)

A manager plans, organizes, delegates, and controls entire projects from start to finish. The role cuts across all areas of business and organizational life and has as its central purpose the increase of resources: personnel, money, machines, and materials. Managers supply the encouragement, coordination, and leadership to achieve company goals. Graduates of this program may qualify for entry-level positions. Addition of a technical or business specialty increases one’s employability.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advisement information may be found on page 6 of this catalog.

GENERAL EDUCATION

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

INFORMATION

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

<table>
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<td>SPCH 119</td>
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<td>WRIT 115</td>
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LIMITED CHOICE REQUIRED

TOTAL: 12–15 CREDITS

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

**CHOICE 1:** General Education Core Areas (See Note 1)

(See the GENERAL EDUCATION section above)

- Writing Core Area: 0 credits
- Speech Communication Core Area: 0 credits
- Science/Technology Core Area: 0 credits
- Global Perspectives and Diversity Core Area: 0 credits

**CHOICE 2:** Accounting

- ACCG 101: Accounting Information for Management 3 credits
- ACCG 210: Principles of Accounting I 4 credits

**CHOICE 3:** Management Related (See Note 2)

- ACCG 211: Principles of Accounting II 4 credits
- BUSN 191: Independent Study in Management 1 credit
- BUSN 192: Independent Study in Management 2 credits
- BUSN 193: Independent Study in Management 3 credits
- BUSN 229: Public Relations 2 credits
- BUSN 295: Small Business Management 3 credits
- ECON 201: Principles of Economics - Micro 3 credits

**ECON 202:** Principles of Economics - Macro 3 credits
**LEGL 215:** Business Law I, Basic Principles 3 credits
**MGMT 227:** Training and Development for Business 2 credits
**MGMT 239:** Time and Stress Management 3 credits
**MGMT 280:** Management Internship 3 credits
**MKTG 215:** Marketing and Managing Your Professional Image 3 credits
**MKTG 220:** Managerial Marketing 3 credits

**MINIMUM TOTAL: 60**

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose a maximum of 2 credits total from the Time Management Series (course codes MGMT 240 through MGMT 277) and/or a maximum of 2 credits of ABGT 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 are unable to follow the suggested sequence may want to speak with an academic advisor or counselor for help with adjustments.

**BUSN 118**  BUSN 201  MGMT 225  LABR 204
**CISB 200**  MGMT 223  MGMT 228  MGMT 209
**LABR 200**  MGMT 224  MKTG 200  MGMT 237
**MGMT 234**  MGMT 221  SPCM 110  Lim.Ch.
**Lim.Ch.**  WRIT 115  Lim.Ch.  Lim.Ch.

MANAGEMENT

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10249 (Effective Fall 1996–Summer 2001)

Certificate holders may improve their opportunities for advancement in this or a related area. The Certificate of Achievement is often useful in conjunction with another degree in professions such as health careers or computers. Additional education enhances an individual's employment opportunities. Courses in this certificate may also be applied directly toward an Associate Degree in Management.

<table>
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<th>REQUIREMENTS</th>
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<td>CISB 200</td>
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<td>MGMT 224</td>
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<tr>
<td>MGMT 234</td>
<td>3</td>
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</table>

LIMITED CHOICE REQUIRED

TOTAL: 6–7 CREDITS

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

**CHOICE 1:** Accounting

- ACCG 101: Accounting Information for Management 3 credits
- ACCG 210: Principles of Accounting I 4 credits

**CHOICE 2:** Communication Skills

- SPCH 110: Oral Communication in the Workplace 3 credits
- WRIT 115: Business Communications 3 credits

**MINIMUM TOTAL: 30**

SUGGESTED COURSE SEQUENCE

**BUSN 118**  LABR 204
**CISB 200**  MGMT 228
**MGMT 224**  MGMT 231
**MGMT 225**  MGMT 234
**Lim.Ch.**  Lim.Ch.
MANAGEMENT, ADVANCED
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10280 (Effective Fall 1996–Summer 2001)

This is an advanced certificate program that may be taken after obtaining an associate or bachelor's 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 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

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

REQUIREMENTS

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<td>Strategic Management and Policy (See Note 1)</td>
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<td>MGMT 304</td>
<td>Organizational Development</td>
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<tr>
<td>MGMT 329</td>
<td>Advanced Management Communication Skills</td>
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<td>MGMT 332</td>
<td>Managerial Ethics</td>
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<td>MGMT 335</td>
<td>Managerial Statistics</td>
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<td>MGMT 337</td>
<td>Human Resource Management Skills</td>
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<tr>
<td>MGMT 338</td>
<td>Current Topics in Management</td>
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TOTAL: 21 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>Principles of Management</td>
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<td>MGMT 300</td>
<td>Introduction to Management</td>
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<td>ACGG 211</td>
<td>Principles of Finance</td>
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<td>MGMT 346</td>
<td>Managerial Finance</td>
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TOTAL: 9–10 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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<td>MGMT 335</td>
<td>MGMT 337</td>
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<td>MGMT 338</td>
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NOTES
1. It is recommended that MGMT 301 be taken near the end of this Certificate program.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240–MGMT 277) and/or a maximum of 2 credits from CABS prefix courses of 110 or above.

MINIMUM TOTAL

30

124 — LANSING COMMUNITY COLLEGE CATALOG 1996–97
**COMPUTER SALES SPECIALIST**

**ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10179 (Effective Fall 1996–Summer 2001)

Computer sales representatives sell computers and network hardware and software systems. They analyze a customer's needs and recommend the computer system that best meets the customer's requirements. They emphasize salable features, such as flexibility, cost, capacity, and economy of operation. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

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

<table>
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<td>Microsoft Windows</td>
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<td>CABS 100</td>
<td>Introduction to Computer Information Systems</td>
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<td>CABS 107</td>
<td>DOS Management</td>
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<td>CABS 119</td>
<td>Introduction to Windows Programming with Visual Basic</td>
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<td>CABS 130</td>
<td>Data Communications</td>
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<td>CABS 200</td>
<td>Information Systems: Technology and Problem Solving</td>
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<td>Microcomputer Hardware Support</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace: A Domestic and Global Perspective</td>
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<td>Marketing and Managing Your Professional Image</td>
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<td>MKTG 120</td>
<td>Sales</td>
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<td>Computer Field Sales Internship</td>
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<td>Consumer Behavior</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>WRIT 115</td>
<td>Business Communications</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 Note 1) 0 Credits
(See the GENERAL EDUCATION section above)
- Writing Core Area 0
- Speech Communication Core Area 0
- Science/Technology Core Area 0
- Global Perspectives and Diversity Core Area 0

**CHOICE 2:** Computer Related (See Note 2) 3-4 Credits

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<td>Introduction to Advertising</td>
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<td>MKTG 262</td>
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<td>MKTG 204</td>
<td>Marketing Research</td>
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**MINIMUM TOTAL**

50

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for these core areas.
2. Choose from CABS-prefix courses of 111 or above and/or CABS-prefix courses not already used to meet degree requirements.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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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**FIELD SALES AND MARKETING ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10190 (Effective Fall 1996-Summer 2001)

Sales marketing specialists, or sales representatives, sell products to wholesalers, retailers, or consumers, usually on a commission basis. They call on customers, demonstrate products, point out salable features, answer questions, and forward orders. Some sales representatives sell services, rather than products. Graduates of this program are prepared to work in a variety of manufacturing, wholesaling, and retailing environments, as well as in the service sector of our economy. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

Contact the Business Careers Department, Old Central Building, Room 219, telephone number (517) 483-1522.

**REQUIREMENTS**

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<td>Information Systems Technology and Problem Solving</td>
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<td></td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I. Basic Principles</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 233</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 100</td>
<td>Current Issues in Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 121</td>
<td>Advanced Sales</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MKTG 122</td>
<td>Field Sales Internship</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 201</td>
<td>Marketing Internship</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 211</td>
<td>Consumer Behavior</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
<td></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 (See Note 1)

| Writing Core Area | 6 Credit |
| Speech Communication Core Area | 6 Credit |
| Science/Technology Core Area | 6 Credit |
| General Perspectives and Diversity Core Area | 6 Credit |

**CHOICE 2:** Sales/Marketing Related (See Note 2)

| Principles of Accounting | 3 Credit |
| Principles of Accounting II | 3 Credit |
| International Business | 3 Credit |
| Public Relations | 2 Credit |
| Microsoft Office | 3 Credit |
| Principles of Economics · Micro | 3 Credit |
| Principles of Economics · Macroeconomics | 3 Credit |
| Principles of Management | 3 Credit |
| Organizational Behavior | 3 Credit |
| Time and Stress Management | 3 Credit |

**FIELD SALES AND MARKETING CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10242 (Effective Fall 1996-Summer 2001)

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>
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<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 122</td>
<td>Field Sales Internship</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WRTT 115</td>
<td>Business Communications</td>
<td>3</td>
<td></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)

| 5 Credits | |

**NOTES**

1. Choose any course with a MKTG prefix not already used to meet certificate requirements.

**SUGGESTED COURSE SEQUENCE**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>CABS 110</td>
<td></td>
</tr>
<tr>
<td>MKTG 119</td>
<td>MKTG 122</td>
<td></td>
</tr>
<tr>
<td>MKTG 120</td>
<td>MKTG 200</td>
<td></td>
</tr>
<tr>
<td>WRTT 115</td>
<td>SPCH 110</td>
<td></td>
</tr>
</tbody>
</table>

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MARKETING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10204 (Effective Fall 1996-Summer 2001)

Marketing is the set of activities that aims to satisfy the customer while making a profit. It is concerned with determining need and meeting demand by making goods and services known, available, and affordable. Entry-level personnel may require time in sales before internal promotion into marketing management positions. Graduates of this program are prepared to work in nearly every type of business and organization today. Traditional product marketing management is giving way to areas like nonprofit organization marketing, leading to a diverse job opportunity picture. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

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

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1822.

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 229</td>
<td>Public Relations</td>
<td>2</td>
</tr>
<tr>
<td>CABS 119</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CISB 205</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 204</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 100</td>
<td>Current Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</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 200</td>
<td>Principles of Marketing</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>
<td>3</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>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 200</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 254</td>
<td>Principles of Economics - Micro</td>
<td>2</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics - Macro</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 46 CREDITS

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose up to 4 credits of TLE Series courses (MGMT 248 through MGMT 273).

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 130</td>
<td>Retailing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
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</table>

MARKETING CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10295 (Effective Fall 1996-Summer 2001)

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 130</td>
<td>Retailing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Marketing Related (See Note 1)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
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<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
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</tbody>
</table>

MINIMUM TOTAL: 6 CREDITS

NOTES
1. Choose any course with a MKTG prefix not already used to meet certificate requirements.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BUSN 118</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
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MEDIATECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10164 (Effective Fall 1996–Summer 2001)

Media Technology is an integrated program that prepares students for professional careers in audio, video, and television/video. Audio professionals work in audio production, audio post-production for video and sound reinforcement positions, as well as in a variety of audio-related jobs. Radio professionals work in radio production, programming, promotion, on-air news/sports announcing, and station operations. Television/video professionals work in producing, directing, technical operations, videography, and video-tape editing in broadcast and non-broadcast settings. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course 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, some students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Media Technology Program, Academic and Office Facility, Room 106, telephone number (517) 483-1676.

REQUIREMENTS

<table>
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<tr>
<td>CISB 100</td>
<td>Introduction to Computer Information Systems (See Note 1)</td>
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<td>MTEC 110</td>
<td>Audio Production I</td>
<td>4</td>
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<tr>
<td>MTEC 112</td>
<td>Audio Production II</td>
<td>4</td>
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<tr>
<td>MTEC 150</td>
<td>Visual Media Design</td>
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<tr>
<td>MTEC 150</td>
<td>Copywriting for the Media</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 150</td>
<td>The Ethics and Social Impact of the Media</td>
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<tr>
<td>MTEC 296</td>
<td>Media Internship (See Note 2)</td>
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<tr>
<td>WRT 121</td>
<td>Composition I</td>
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</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 27–28 CREDITS |

| CHOICE 1: | General Education Core Areas | 6 Credits |

(See the GENERAL EDUCATION section above)

| Writing Core Area (See Note 3) | 3 |
| Speech Communication Core Area (See Note 3) | 3 |
| Global Perspectives and Diversity Core Area | 3 |

| CHOICE 2: | Media Specialty (Choose One Subchoice) | 17–18 Credits |

Subchoice 2A: Audio

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
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<tr>
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<td>Audio Recording I</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 122</td>
<td>Sound Reinforcement</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 230</td>
<td>Audio Production II</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 221</td>
<td>Audio Recording II</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 223</td>
<td>Sound Reinforcement Practicum</td>
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Subchoice 2B: Radio

<table>
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<th>Title</th>
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<tr>
<td>MTEC 239</td>
<td>Radio Programming and Promotions</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 232</td>
<td>Radio Workshop (See Note 4)</td>
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<tr>
<td>MTEC 231</td>
<td>Radio News Reporting</td>
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<tr>
<td>MTEC 232</td>
<td>Radio Sales and Marketing</td>
<td>3</td>
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</table>

Subchoice 2C: Video/Television

<table>
<thead>
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<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>MTEC 151</td>
<td>Electronic Field Production I</td>
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<tr>
<td>MTEC 252</td>
<td>Electronic Field Production II</td>
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<td>MTEC 252</td>
<td>Lighting for Television and Video</td>
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<tr>
<td>MTEC 254</td>
<td>Electronic Presentation Graphics</td>
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</table>

Subchoice 2D: General Media Occupations (See Note 5)

CHOICE 3: Media-Related (See Note 6) | 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 296 will be limited to Media Technology majors who have successfully completed 75 percent of their MTEC course work.
3. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
4. A Media Technology major may not apply more than four credits in MTEC 230 toward this degree.
5. Credits must be taken from Subchoices 2A, 2B, 2C, and/or departmentally approved MTEC electives or other departmentally approved electives. Students following Subchoice 2D must consult with a Media Technology Program Advisor regarding course selection.
6. Choose courses with a prefix of MTEC not already used to meet degree requirements.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>MTEC 110</td>
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<td>WRT 121</td>
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<tr>
<td>MTEC 150</td>
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</table>

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ADMINISTRATIVE ASSISTANT ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10114 (Effective Fall 1996–Summer 2001)

The administrative assistant is generally responsible for coordinating and expediting office functions under the direction of the business executive. Specific duties may include activities related to communications, personnel, budget, records control, and computers. The administrative assistant is characterized by varied skills and flexibility and frequently develops a close and confidential relationship with the executive. The administrative assistant becomes the primary information source for the chief administrator and is consulted on a regular basis on matters of policy and procedure for the institutions human, physical and monetary resources. Sample job titles include office manager, administrative secretary and administrative assistant.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

GENERAL EDUCATION

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
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</thead>
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<tr>
<td>ACGG 100</td>
<td>Practical Accounting for Non-Majors</td>
<td>3</td>
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<tr>
<td>CABS 105</td>
<td>Advanced Keyboarding on the Computer</td>
<td>4</td>
</tr>
<tr>
<td>CABS 128</td>
<td>Lotus 1-2-3 for Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISE 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 100</td>
<td>Editing Business Documents</td>
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</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>OADM 197</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 219</td>
<td>Records and Information Management II</td>
<td>4</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 249</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 7 CREDITS |

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

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

(See the GENERAL EDUCATION section above)

Writing Core Area 0
Speech Communication Core Area 0
Science/Technology Core Area 0
Global Perspectives and Diversity Core Area 0

CHOICE 2: Word Processing 4 Credits

CABS 111 Beginning Wordperfect for the Office 4
CABS 113 Microsoft Word for the Office 4

CHOICE 3: Management 3 Credits

MGMT 223 Supervision 3
MGMT 224 Human Resource Management 3

MINIMUM TOTAL 60

NOTES

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<th>IV</th>
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</thead>
<tbody>
<tr>
<td>ACGG 100</td>
<td>LEGL 215</td>
<td>CABS 128</td>
<td>OADM 216</td>
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<td>CABS 105</td>
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<td>OADM 249</td>
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<td>WRIT 115</td>
<td>OADM 200</td>
<td>Law Ch苏3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Law Ch苏2</td>
<td>OADM 275</td>
<td></td>
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</table>
EXECUTIVE SECRETARY ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10104 (Effective Fall 1996–Summer 2001)

An executive secretary coordinates the office functions of a particular executive's office within an organization. This person organizes tasks such as data entry, correspondence, check and cash disbursements, and other operations; develops office procedures; and prepares reports of office activities. Graduates of this program are prepared to work in a variety of businesses and organizations in both the private and public sectors.

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

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
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<td>CABS 105</td>
<td>Advanced Keyboarding on the Computer</td>
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<td>CISB 209</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>MATH 117</td>
<td>Math for Business</td>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
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<td>OADM 110</td>
<td>Machine Transcription</td>
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<td>College Speedwriting</td>
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<td>Human Behavior in the Workplace</td>
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<td>OADM 209</td>
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<td>OADM 220</td>
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<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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LIMITED CHOICE REQUIREMENTS

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<td>CABS 134</td>
<td>FoxPro Database for Windows</td>
<td>3</td>
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<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>2</td>
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<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
<td>4</td>
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<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
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<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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<td>OADM 110</td>
<td>Machine Transcription</td>
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<td>OADM 200</td>
<td>Critical Thinking</td>
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<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
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<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
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<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 54 CREDITS

INFORMATION/WORD PROCESSING ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10106 (Effective Fall 1996–Summer 2001)

Word processors operate computers and/or terminals to enter, store, revise, and reproduce business documents and to help facilitate the flow of related office work. Information may be submitted as typed copy, handwritten copy, or by recording. When personal computers are used, information may be received electronically via a wide- or local-area network.

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

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
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<td>Advanced Keyboarding on the Computer</td>
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<td>CABS 128</td>
<td>Lotus 1-2-3 for Windows</td>
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<tr>
<td>CABS 134</td>
<td>FoxPro Database for Windows</td>
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<tr>
<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
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<tr>
<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
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<tr>
<td>MATH 117</td>
<td>Math for Business</td>
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<td>OADM 102</td>
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<td>Records and Information Management I</td>
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<td>Administrative Office Management</td>
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<td>Office Internship</td>
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<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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LIMITED CHOICE REQUIREMENTS

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<td>FoxPro Database for Windows</td>
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<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
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<td>OADM 200</td>
<td>Critical Thinking</td>
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<td>OADM 215</td>
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<td>OADM 220</td>
<td>Administrative Office Management</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<td>WRIT 114</td>
<td>Business English</td>
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<tr>
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</tbody>
</table>

TOTAL: 55 CREDITS

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

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

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<td>CABS 105</td>
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<td>OADM 215</td>
<td>WRIT 115</td>
<td>SPCH 110</td>
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<tr>
<td>WRIT 114</td>
<td>Lim Ch.</td>
<td>Lim Ch. 2</td>
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</table>

TOTAL: 8 CREDITS

130 LANSING COMMUNITY COLLEGE CATALOG 1996-97
INFORMATION/WORD PROCESSING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10149 (Effective Fall 1996–Summer 2001)

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

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 5 of this catalog.

INFORMATION

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

REQUIREMENTS

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<td>CABS 134</td>
<td>FoxPro Database for Windows</td>
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</tr>
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<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
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<td>Machine Transcription</td>
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<td>WRIT 114</td>
<td>Business English</td>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 8 CREDITS

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

CHOICE 1:

BEGINNING WORD PROCESSING

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<tbody>
<tr>
<td>CABS 111</td>
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<td>CABS 113</td>
<td>Microsoft Word for the Office</td>
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CHOICE 2:

ADVANCED WORD PROCESSING

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<tr>
<td>CABS 118</td>
<td>Advanced Word for the Office</td>
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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.

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<td>CABS 221</td>
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<td>OADM 102</td>
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<td>OADM 110</td>
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<td>Lim.Ch. 1</td>
<td>Lim.Ch.2</td>
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</table>

AUTOMATED OFFICE SPECIALIST
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10164 (Effective Fall 1996–Summer 2001)

This program is designed for the individual who may have previous secretarial or office education and experience, and who desires to update training and skills for the new automated office environment. Special emphasis is given to computer usage for word processing, and other applications that will provide information for the decision-making process within an administrative office position. Writing skills are also developed to improve communication.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 5 of this catalog.

INFORMATION

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

REQUIREMENTS

<table>
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<td>CABS 124</td>
<td>Advanced Lotus Release 2 for DOS</td>
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<td>FoxPro Database for Windows</td>
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<td>Business Graphics and Presentation</td>
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<tr>
<td>CABS 182</td>
<td>Microsoft Powerpoint/Windows</td>
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<td>Information Systems Technology and Problem Solving</td>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 4 CREDITS

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

CHOICE 1:

ADVANCED WORD PROCESSING

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<tr>
<td>CABS 118</td>
<td>Advanced Word for the Office</td>
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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.

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<td>OADM 102</td>
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<td>CABS 182</td>
<td>OADM 110</td>
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<tr>
<td>GISB 200</td>
<td>Lim.Ch. 1</td>
</tr>
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</table>
LEGAL SECRETARY
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10207 (Effective Fall 1996-Summer 2001)

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 summons, complaints, motions, and subpoenas. Graduates of this program are prepared to work in law offices, courts, public agencies, and in legal departments of larger businesses and organizations.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

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

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

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<td>CABS 105</td>
<td>Advanced Keyboarding on the Computer</td>
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<td>CIES 120</td>
<td>Information Systems Technology and Problem Solving</td>
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<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
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<td>MATH 117</td>
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<td>OADM 102</td>
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<td>Machine Transcription</td>
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<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>2</td>
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<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>1</td>
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<tr>
<td>OADM 206</td>
<td>Legal Vocabulary and Forms Preparation</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRT 115</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 54 CREDITS

LIMITED CHOICE REQUIREMENTS

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

(See the GENERAL EDUCATION section above)

Writing Core Area 0
Speech Communication Core Area 0
Science Technology Core Area 0
Global Perspectives and Diversity Core Area 0

CHOICE 2: Beginning Word Processing 4 Credits

CABS 111 Beginning Wordperfect for the Office 4
CABS 113 Microsoft Word for the Office 4

CHOICE 3: Advanced Word Processing 4 Credits

CABS 112 Advanced Wordperfect for the Office 4
CABS 118 Advanced Word for the Office 4

MINIMUM TOTAL 62

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

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<tbody>
<tr>
<td>ACG 100</td>
<td>CISR 200</td>
<td>OADM 200</td>
<td>MATH 117</td>
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<td>CABS 105</td>
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<td>OADM 215</td>
<td>OADM 203</td>
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<td>OADM 195</td>
<td>OADM 102</td>
<td>OADM 275</td>
<td>OADM 220</td>
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<td>OADM 206</td>
<td>OADM 110</td>
<td>WRT 115</td>
<td>OADM 240</td>
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<td>WRT 114</td>
<td>Lm.Ch.2</td>
<td>Lm.Ch.3</td>
<td>SPCH 110</td>
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</table>
MEDICAL ADMINISTRATIVE ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10155 (Effective Fall 1996–Summer 2001)

Medical administrative assistants may transcribe dictation, prepare correspondence, and assist physicians or medical scientists with reports, speeches, articles, and conference proceedings. They may take patient case histories, arrange for patients to be hospitalized, order supplies, prepare and send bills to patients, record appointments, and prepare medical charts and reports along with regular secretarial tasks. Graduates of this program may work in hospitals, HMOs, private practices, insurance companies, public health departments, and other healthcare settings.

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

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

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 219, telephone number (517) 485-1522.

REQUIREMENTS

<table>
<thead>
<tr>
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<td>3</td>
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<tr>
<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
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<tr>
<td>CABS 135</td>
<td>Advanced Keyboarding on the Computer</td>
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<td>CHSE 111</td>
<td>Medical Insurance Billing I</td>
<td>3</td>
<td></td>
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<td>CHSE 112</td>
<td>Medical Insurance Billing II</td>
<td>3</td>
<td></td>
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<tr>
<td>CISE 260</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
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<tr>
<td>HUMS 265</td>
<td>Seminar: Ethical Issues in Medicine</td>
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<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
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<td>OADM 197</td>
<td>Medical Vocabulary</td>
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<td>OADM 198</td>
<td>Medical Record Management</td>
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<td></td>
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<td>OADM 207</td>
<td>Medical Transcription</td>
<td>3</td>
<td></td>
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<td>OADM 220</td>
<td>Administrative Office Management</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
<td>4</td>
<td></td>
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<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
<td></td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
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</tr>
</tbody>
</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 (See Note 1)</th>
<th>8 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
<td>0</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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 2: Beginning Word Processing</th>
<th>4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 111</td>
<td>Beginning Wordperfect for the Office</td>
</tr>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 3: Advanced Word Processing</th>
<th>4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 112</td>
<td>Advanced Wordperfect for the Office</td>
</tr>
<tr>
<td>CABS 118</td>
<td>Advanced Word for the Office</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 68

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 prerequisites plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below, for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill, should contact an academic advisor or counselor for help with adjustments.
MEDICAL TRANSCRIPTIONIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 19756 (Effective Fall 1996–Summer 2001)

Medical transcriptionists listen to doctors’ audio recordings and use word processors to transcribe what they hear into the proper printed format. Transcriptionists must be medical language specialists and be familiar with patient assessment, therapeutic procedures, diagnoses, and prognoses. In addition to transcribing letters, reports, and the like, they may have other clerical duties.

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

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

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 45 CREDITS</th>
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<tr>
<td>CODE</td>
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<tr>
<td>ANAT 151</td>
<td>Anatomy and Physiology I</td>
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<tr>
<td>ANAT 152</td>
<td>Anatomy and Physiology II</td>
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<tr>
<td>CABS 105</td>
<td>Advanced Keyboarding on the Computer</td>
</tr>
<tr>
<td>CABS 269</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
</tr>
<tr>
<td>OADM 197</td>
<td>Medical Vocabulary</td>
</tr>
<tr>
<td>OADM 198</td>
<td>Medical Records Management</td>
</tr>
<tr>
<td>OADM 201</td>
<td>General Pharmacology for Business</td>
</tr>
<tr>
<td>OADM 207</td>
<td>Medical Transcription</td>
</tr>
<tr>
<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
</tr>
<tr>
<td>WRT 114</td>
<td>Business English</td>
</tr>
<tr>
<td>WRT 115</td>
<td>Business Communications</td>
</tr>
</tbody>
</table>

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

TOTAL: 11 CREDITS

CHOICE 1: General Education Core Areas (See Note 1) 6 Credits
(See the GENERAL EDUCATION section above)
- Writing Core Area 0
- Speech Communication Core Area 0
- Science/Technology Core Area 0
- Global Perspectives and Diversity Core Area 0

CHOICE 2: Beginning Word Processing 4 Credits
- CABS 111 Beginning Wordperfect for the Office 4
- CABS 113 Microsoft Word for the Office 4

CHOICE 3: Advanced Word Processing 4 Credits
- CABS 112 Advanced Wordperfect for the Office 4
- CABS 118 Advanced Word for the Office 4

CHOICE 4: Medical Transcriptionist Related 3 Credits
- GHSE 111 Medical Insurance Billing I 3
- HUMS 265 Ethical Issues in Medicine 3

MINIMUM TOTAL 50

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

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 151</td>
<td>ANAT 152</td>
<td>Lim Ch 3</td>
<td>MATH 117</td>
</tr>
<tr>
<td>CABS 105</td>
<td>Lim Ch 2</td>
<td>Lim Ch 4.</td>
<td>OADM 222</td>
</tr>
<tr>
<td>OADM 197</td>
<td>OADM 198</td>
<td>OADM 207</td>
<td>OADM 240</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>OADM 201</td>
<td>WRIT 115</td>
<td>SPCH 110</td>
</tr>
</tbody>
</table>

134 LANSING COMMUNITY COLLEGE CATALOG 1996-97
OFFICE SUPPORT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10172 (Effective Fall 1996–Summer 2001)

An office support specialist is assigned various clerical duties in accordance with the office procedures of individual organizations and work units. Duties may include a combination of office machine operation, data entry, data retrieval, communication, and dealing with clients. Graduates of this program are prepared to work in a variety of businesses and organizations in a support capacity.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACCG 100</td>
<td>Practical Accounting for Non Majors</td>
<td>3</td>
</tr>
<tr>
<td>CABS 123</td>
<td>Forpro Database For Windows</td>
<td>3</td>
</tr>
<tr>
<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>OADM 290</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 295</td>
<td>Professional Office Procedures</td>
<td>1</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>2</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
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</tbody>
</table>

TOTAL: 29 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CHOICE 1:</th>
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<th>4 Credits</th>
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<tbody>
<tr>
<td>CABS 111</td>
<td>Beginning Wordperfect for the Office</td>
<td>4</td>
</tr>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office</td>
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</table>

MINIMUM TOTAL: 33 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.

ACCG 100
CABS 123
CABS 141
OADM 102
OADM 290
OADM 215
WRIT 114

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CHOICE 1:</th>
<th>General Education Core Areas (See Note 1)</th>
<th>6 Credits</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
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<tr>
<td>Science/Technology Core Area</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
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<table>
<thead>
<tr>
<th>CHOICE 2:</th>
<th>Word Processing</th>
<th>4 Credits</th>
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</thead>
<tbody>
<tr>
<td>CABS 111</td>
<td>Beginning Wordperfect for the Office</td>
<td>4</td>
</tr>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 62 CREDITS

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACCG 100</td>
<td>Practical Accounting for Non Majors</td>
<td>3</td>
</tr>
<tr>
<td>CABS 123</td>
<td>Forpro Database For Windows</td>
<td>3</td>
</tr>
<tr>
<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>OADM 290</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 295</td>
<td>Professional Office Procedures</td>
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</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>2</td>
</tr>
<tr>
<td>WRIT 114</td>
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<td>3</td>
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<tr>
<td>LANSING COMMUNITY COLLEGE CATALOG 1996-97</td>
<td>135</td>
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</tr>
</tbody>
</table>
DANCE TRANSFER AND DANCE CAREER ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10118 (Effective Fall 1996-Summer 2001)

This degree program provides solid technique 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. 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 of this catalog.

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

INFORMATION
Contact the Humanities and Performing Arts Department, Arts and Science Building, Room 225, telephone number (517) 483-1018.

REQUIREMENTS

<table>
<thead>
<tr>
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<td>Choreography</td>
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<td>DAN 124</td>
<td>Improvisation</td>
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<tr>
<td>DAN 151</td>
<td>Dance History</td>
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<tr>
<td>DAN 151</td>
<td>Dance Anatomy</td>
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<tr>
<td>IRC 121</td>
<td>Integrated Science for Education</td>
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</tr>
<tr>
<td>IRC 121</td>
<td>Music Appreciation</td>
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<tr>
<td>IRC 121</td>
<td>Introduction to Sociology</td>
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<tr>
<td>IRC 121</td>
<td>Dynamics of Communication</td>
<td>3</td>
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<td>IRC 121</td>
<td>Introduction to Theatre</td>
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</tr>
<tr>
<td>IRC 121</td>
<td>Composition 1</td>
<td>4</td>
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</table>

TOTAL: 31 CREDITS

LIMITED CHOICE REQUIREMENTS (See Notes 1 and 2) TOTAL: 34.5-38 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 3) 0 Credits

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

CHOICE 2: Career OR Transfer (Choose one Subchoice) 34.5-38 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
Repetory/Performance Classes (See Notes 7 and 8) 4.5

Subchoice 2B: Transfer Requirements 38 Credits

Ballet Technique Classes (See Note 4) 8
Modern Technique Classes (See Note 5) 8
Related Professional Technique Classes (See Note 6) 5
Repetory/Performance Classes (See Notes 7 and 8) 4
English Composition (See Note 9) 4
Humanities (See Note 9) 4
Social Science (See Note 9) 4

MINIMUM TOTAL 65.5

NOTES

1. Specific dance technique courses must be selected with the guidance of a dance program advisor. Technique courses can be repeated for credit until proficiency is achieved.
2. Those students who plan on attending a school in Michigan should include an additional four-credit course in: 1) Science or Mathematics and 2) Social Science to complete all general education requirements.
3. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
4. Choose from DAN 124 courses numbered 101, 111, 201, 211, or 244.
5. Choose from DAN 124 courses numbered 102, 112, 202, or 212.
6. Choose from DAN 124 courses numbered 103, 104, 113, 114, 122, 123, 203, or 204.
7. Repertory/Performance courses may be repeated for credit. Video Dance Repertory may be repeated a maximum of two (2) times for credit.
8. Choose from DAN 124 courses numbered 161 through 165.
9. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate English Composition, Humanities, and Social Science courses.

SUGGESTED COURSE SEQUENCE

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

<table>
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<th>1</th>
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<tbody>
<tr>
<td>DAN 124</td>
<td>MUSC 100</td>
<td>DAN 123</td>
<td>ISCI 21</td>
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<tr>
<td>DAN 124</td>
<td>SOCI 120</td>
<td>DAN 161</td>
<td>Lim. Ch.</td>
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<tr>
<td>THEA 110</td>
<td>Lim. Ch.</td>
<td>SPCH 120</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Lim. Ch.</td>
<td>Spch 12</td>
<td>Lim. Ch.</td>
</tr>
</tbody>
</table>

136 LANSING COMMUNITY COLLEGE CATALOG 1996-97
MUSIC COMMERCIAL PERFORMANCE ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10274 (Effective Fall 1996–Summer 2001)

The Music Commercial Performance Program has been designed to focus on today’s music in pop and jazz idioms. It is a first step toward a professional career in commercial music, such as studio engineer, band manager, or performer. In addition to academic music classes, the curriculum includes training in a private instrument, performances with fine ensembles, and introduction to computers and music. Emphasis is placed on integrating skills acquisition with performance opportunities. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

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

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

INFORMATION
The admission requirements for this program may change each academic year. For the most recent application information, contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 252, Gannon Vocational-Technical Center. Telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC COMMERCIAL PERFORMANCE PROGRAM

Curriculum Code: 10722 (Effective Fall 1996–Summer 1997)

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 COMMERCIAL PERFORMANCE PROGRAM REQUIREMENTS

Curriculum Code: 10274

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>TOTAL: 53 CREDITS</td>
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</tbody>
</table>

MUSC 174 Basic Musicianship II 4
MUSC 244 Studio Production Commercial 2
MUSC 253 Business of Music 3
MUSC 254 Band Management 2
MUSC 274 Lyric Writing 2
MUSC 280 Private Songwriting 1
SPCH 120 Dynamics of Communication 2
THEA 120 Introduction to Acting 2
WRIT 121 Composition I 4

LIMITED CHOICE REQUIREMENTS: TOTAL: 17-18 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 1) 9 Credits
(See the GENERAL EDUCATION section above)
Writing Core Area 0
Special Communication Core Area 0
Science/Technology Core Area 3
Global Perspectives and Diversity Core Area 6

CHOICE 2: History 4 Credits
MUSC 245 Jazz History I 2
MUSC 246 Rock History I: Blues to the British Invasion 2
MUSC 249 Rock History II: From 1965 to Present 2
MUSC 251 Blues History 2

CHOICE 3: Piano or Guitar Class 1-2 Credits
MUSC 129 Class Piano Major II 2
MUSC 270 Rock Guitar I 1

CHOICE 4: Private Lessons Commercial (See Notes 2 and 3) 6 Credits
MUSC 108 Concert Choir (See Notes 3 and 4) 1
MUSC 119 Lansing Concert Band (See Notes 3 and 5) 1
MUSC 123 Jazz Ensemble (See Notes 3 and 5) 1

MINIMUM TOTAL 70 Credits

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students must complete MUSC courses numbered 283 through 289.
3. Courses may be repeated and must be taken each semester student is enrolled as a major.
4. Required for voice majors only.
5. Required for instrumental major only.

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

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<thead>
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<th>I</th>
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<tbody>
<tr>
<td>MTEC 120</td>
<td>MTEC 121</td>
<td>HUMS 213</td>
<td>ISC 121</td>
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<td>MUSC 138</td>
<td>MUSC 156</td>
<td>MUSC 244</td>
<td>MTEC 220</td>
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<td>MUSC 155</td>
<td>MUSC 174</td>
<td>MUSC 253</td>
<td>MUSC 254</td>
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<td>MUSC 173</td>
<td>Lim. Ch. 2</td>
<td>MUSC 276</td>
<td>MUSC 280</td>
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<td>Lim. Ch. 4</td>
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<tr>
<td>Lim. Ch. 5</td>
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</tr>
</tbody>
</table>
**MUSIC TRANSFER ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 10270 (Effective Fall 1996–Summer 2001)

The Music Transfer Program enables students to transfer to a four-year institution after completing studies in music theory, piano, and applied lessons. In addition to academic music classes, the curriculum includes training in a private instrument, performance with ensembles, and introduction to computers and music. Emphasis is placed on integrating skills acquisition with performing opportunities. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

The admission requirements for this program may change each academic year. For the most recent application information, contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

**REQUIREMENTS FOR ADMISSION TO THE MUSIC TRANSFER PROGRAM**

Curriculum Code: 10721 (Effective Fall 1996–Summer 1997)

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.

C. Complete requirements for the audition pertaining to the specific instrument.

c. Audition. The actual audition day will consist of a live performance on instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

**MUSIC TRANSFER PROGRAM REQUIREMENTS**

Curriculum Code: 10270

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>CODE</strong></td>
<td><strong>TITLE</strong></td>
</tr>
<tr>
<td>ENGL 122</td>
<td>Writing about Literature and Ideas</td>
</tr>
<tr>
<td>HUMS 213</td>
<td>World Civilizations I</td>
</tr>
<tr>
<td>HUMS 214</td>
<td>World Civilizations II</td>
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<tr>
<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
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<tr>
<td>ISCI 122</td>
<td>Integrated Science for Education II</td>
</tr>
<tr>
<td>MUSC 139</td>
<td>Class Piano Major I</td>
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<tr>
<td>MUSC 139</td>
<td>Class Piano Major II</td>
</tr>
<tr>
<td>MUSC 173</td>
<td>Basic Musicianship I</td>
</tr>
<tr>
<td>MUSC 174</td>
<td>Basic Musicianship II</td>
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<tr>
<td>MUSC 273</td>
<td>Advanced Musicianship I</td>
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<td>Advanced Musicianship II</td>
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<tr>
<td>POLS 120</td>
<td>American Political System</td>
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<tr>
<td>SOCIL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SPCCH 120</td>
<td>Dynamics of Communication</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
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</table>

**LIMITED CHOICE REQUIREMENTS**

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

<table>
<thead>
<tr>
<th>CHOICE 1:</th>
<th>General Education Core Areas (See Note 1) (See the GENERAL EDUCATION section above)</th>
</tr>
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<tbody>
<tr>
<td>Writing Core Area</td>
<td>0</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>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
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</table>

<table>
<thead>
<tr>
<th>CHOICE 2:</th>
<th>Private Lessons (See Notes 2 and 3)</th>
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<tbody>
<tr>
<td>Subchoice 3A: Voice Requirements</td>
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</tr>
<tr>
<td>MUSC 108</td>
<td>Concert Choir (See Note 3)</td>
</tr>
<tr>
<td>MUSC 179</td>
<td>Class Voice Major I</td>
</tr>
<tr>
<td>MUSC 180</td>
<td>Class Voice Major II</td>
</tr>
</tbody>
</table>

| Subchoice 3B: Instrumental Requirements |
| MUSC 119 | Lansing Concert Band (See Note 3) | 1 |

**MINIMUM TOTAL**

55 Credits (47 Hours)

**NOTES**

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

2. Students must complete MUSC courses numbered 201 through 217.

3. Courses may be repeated and must be taken each semester student is enrolled as a major.

**SUGGESTED COURSE SEQUENCE**

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

---

**MUSC 121**

<table>
<thead>
<tr>
<th>ENGL 122</th>
<th>HUMS 213</th>
<th>HUMS 214</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 139</td>
<td>MUSC 173</td>
<td>MUSC 174</td>
</tr>
<tr>
<td>Lim. Ch. 2</td>
<td>Lim. Ch. 2</td>
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<tr>
<td>Lim. Ch. 3</td>
<td>Lim. Ch. 3</td>
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</tbody>
</table>

138 ■ LANSING COMMUNITY COLLEGE CATALOG 1996–97
THEATRE - ACTING TRANSFER
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10278 (Effective Fall 1996–Summer 2001)

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

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

INFORMATION
Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1101.

REQUIREMENTS (See Note 1) TOTAL: 53.5 CREDITS

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<td>ENGL 122</td>
<td>Writing about Literature and Ideas</td>
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<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
<td>4</td>
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<td>POLS 120</td>
<td>American Political System</td>
<td>3</td>
<td>3</td>
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<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<td>2</td>
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<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td>1</td>
<td>1</td>
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<tr>
<td>THEA 111</td>
<td>Production Practicum I</td>
<td>2</td>
<td>2</td>
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<tr>
<td>THEA 116</td>
<td>Design Practicum I</td>
<td>1</td>
<td>1</td>
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<tr>
<td>THEA 120</td>
<td>Introduction to Acting</td>
<td>2</td>
<td>2</td>
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<tr>
<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>
<td>2.5</td>
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<td>THEA 171</td>
<td>Dramatic Form and Function I</td>
<td>3</td>
<td>3</td>
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<td>THEA 172</td>
<td>Dramatic Form and Function II</td>
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<td>2</td>
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<tr>
<td>THEA 101</td>
<td>Improvisation</td>
<td>1</td>
<td>1</td>
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<td>THEA 120</td>
<td>Theatre History</td>
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<tr>
<td>THEA 251</td>
<td>Stage Voice for the Actor</td>
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<td>THEA 261</td>
<td>Movement for the Actor</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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</table>

LIMITED CHOICE REQUIREMENTS (See Note 2) TOTAL: 15–15.5 CREDITS

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

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

<table>
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<tr>
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<td>Writing about Literature and Ideas</td>
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<td>Introduction to Theatre</td>
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</tr>
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<td>THEA 251</td>
<td>Stage Voice for the Actor</td>
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<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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CHOICE 2: Theatre (Choose 1 Subchoice)
Subchoice 2A:

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<tr>
<td>THEA 235</td>
<td>Studio Theatre Performance V</td>
<td>2</td>
<td>2</td>
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<td>THEA 241</td>
<td>Acting III - Creating Theatre</td>
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<td>2.5</td>
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<tr>
<td>THEA 271</td>
<td>Dramatic Form and Function II</td>
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</table>

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 four-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. Subchoice 2B can only be selected through an audition process for a musical production.
5. Students may not select any courses that are the same as those listed in the Dance 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.

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<thead>
<tr>
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<th>CODE</th>
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<td>SPCH 120</td>
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<td>POLS 120</td>
<td>THEA 181</td>
<td>Lim Ch. 2</td>
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<td>THEA 132</td>
<td>THEA 111</td>
<td>THEA 210</td>
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<td>THEA 141</td>
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<td>THEA 233</td>
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<td>THEA 172</td>
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<td>WRIT 121</td>
<td>THEA 142</td>
<td>THEA 172</td>
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LANSING COMMUNITY COLLEGE CATALOG 1996-97 # 139
## PHOTOGRAPHIC IMAGING

### ASSOCIATE IN APPLIED SCIENCE DEGREE

**Curriculum Code:** 10277 (Effective Fall 1996 - Summer 2001)

The field of photography is vast and diverse with employment opportunities in "still," "moving," and combinations of both types of imaging media. Professionals include everyone from the traditional person with a camera, to a lab or service bureau employee, to someone working at a high-end computer station. Skill requirements fall into two categories: visual and technical. Visual skills include idea development, composition, lighting, and other problem-solving concepts related to the communication standards of the chosen field. Technical skills include practical and theoretical knowledge of cameras and other photographic-related equipment, light sensitive materials, processes, and digital-based imaging equipment and software. A "photographer" may be self-employed, be a member of a small team, or be employed by a large company.

### PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

### GENERAL EDUCATION

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

### INFORMATION

Contact the Photographic Imaging Technology Program, Photography Center, Room 117, Telephone number (517) 483-1673.

### REQUIREMENTS

<table>
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<td><strong>CODE</strong></td>
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<tr>
<td>IMAG 111</td>
<td>Introduction to Photographic Technology I</td>
</tr>
<tr>
<td>IMAG 112</td>
<td>Design Fundamentals for Imaging Technologies</td>
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<tr>
<td>IMAG 113</td>
<td>Lighting Concepts and Applications</td>
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<td>IMAG 114</td>
<td>Introduction to Photographic Color Technology</td>
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<tr>
<td>IMAG 121</td>
<td>Imaging Technology</td>
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<td>IMAG 224</td>
<td>Emerging Image Technologies I</td>
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<td>IMAG 230</td>
<td>Imaging Technology Major I</td>
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<td>IMAG 231</td>
<td>Imaging Technology Major II</td>
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<tr>
<td>IMAG 234</td>
<td>Portfolio Assembly and Degree Completion Activities</td>
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<tr>
<td>SDEV 127</td>
<td>Job Search Skills</td>
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### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

<table>
<thead>
<tr>
<th><strong>CREDITS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>9 Credits</td>
</tr>
</tbody>
</table>

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

#### CHOICE 2: Specialization (Choose 1 Subchoice)

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<thead>
<tr>
<th><strong>CREDITS</strong></th>
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<tbody>
<tr>
<td>23 Credits</td>
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</tbody>
</table>

- **Subchoice 2A: Still Image Emphasis**
  - IMAG 115: Color Directed Study: 1 credit
  - IMAG 117: Introduction to Photographic Technology II: 4 credits
  - IMAG 220: Intermediate Still Imaging Technology: 4 credits
  - IMAG 221: Advanced Still Imaging Technology: 4 credits
  - IMAG 222: Intermediate Color Applications and Technology: 3 credits
  - IMAG 223: Advanced Color Applications and Technology: 4 credits
  - IMAG 233: The Business of Photography: Practices and Directions: 3 credits

### ELECTIVES

Complete the indicated number of credits in courses of your choice. Total: 12 Credits

### NOTES

1. For students completing all requirements for this program (including IMAG 114), the Science/Technology Core Area requirement is waived.
2. Students completing the curriculum have the option of doing so through a three-year, full-time sequence of courses or through part-time enrollment over a longer period. The full-time sequence begins Fall Semester only. Part-time students may begin their studies any semester.
3. For graduation, a student must have earned a minimum grade of 2.0 in all courses taken to satisfy the course credits required in this curriculum.
4. The Portfolio is considered to be the final course in this curriculum. All imaging and non-photo courses must be completed or be taken concurrently with IMAG 234.

### SUGGESTED COURSE SEQUENCE

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

### STILL IMAGE EMPHASIS

<table>
<thead>
<tr>
<th><strong>Semester</strong></th>
<th><strong>Course</strong></th>
<th><strong>CRS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>IMAG 101</td>
<td>M</td>
</tr>
<tr>
<td>II</td>
<td>IMAG 114</td>
<td>I</td>
</tr>
<tr>
<td>III</td>
<td>IMAG 121</td>
<td>II</td>
</tr>
<tr>
<td>IV</td>
<td>IMAG 214</td>
<td>III</td>
</tr>
</tbody>
</table>

### MOVING IMAGE EMPHASIS

<table>
<thead>
<tr>
<th><strong>Semester</strong></th>
<th><strong>Course</strong></th>
<th><strong>CRS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>IMAG 111</td>
<td>M</td>
</tr>
<tr>
<td>II</td>
<td>IMAG 114</td>
<td>I</td>
</tr>
<tr>
<td>III</td>
<td>IMAG 121</td>
<td>II</td>
</tr>
<tr>
<td>IV</td>
<td>IMAG 214</td>
<td>III</td>
</tr>
</tbody>
</table>
**QUALITY ASSURANCE ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10206 (Effective Fall 1996 - Summer 2001)

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

**GENERAL EDUCATION**

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

**INFORMATION**

Contact the Technology Careers Department, Gannon Vocational Technical Center, Room 220, telephone number (517) 483-1318.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>QUAL 100</td>
<td>Introduction to Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 103</td>
<td>Probability and Statistics for Quality Assurance</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 105</td>
<td>Control Charts and Problem Solving I</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 115</td>
<td>Metrology I</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 200</td>
<td>Quality Improvement Teams</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 203</td>
<td>Quality Planning and Systems Management</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 205</td>
<td>Cost of Quality</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 206</td>
<td>Statistical Sampling</td>
<td>2</td>
</tr>
<tr>
<td>QUAL 207</td>
<td>Control Charts and Problem Solving II</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 209</td>
<td>Reliability</td>
<td>3</td>
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<tr>
<td>QUAL 212</td>
<td>Applied Statistics for Quality Assurance</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 215</td>
<td>Experimental Design in Quality Assurance</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL: 42 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)

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

**TOTAL: 12 CREDITS**

#### CHOICE 2: Additional Quality Assurance Courses

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUAL 119</td>
<td>Metrology II</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 121</td>
<td>Introduction to Statistical Process Control</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 124</td>
<td>Quality Assurance in Service Organizations</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 224</td>
<td>Manufacturing Supervision</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 239</td>
<td>Quality Improvement Projects</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 3 CREDITS**

#### CHOICE 3: Mathematics

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 112</td>
<td>Intermediate Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 121</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 122</td>
<td>College Algebra II and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 126</td>
<td>College Algebra and Trigonometry</td>
<td>5</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

- **1996-1997 Catalog Lansing Community College**
QUALITY MANAGEMENT
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10246 (Effective Fall 1996-Summer 2001)

Quality management is an area of study which focuses on the managerial principles and statistical techniques that are necessary to continuously improve organizational effectiveness and ensure the delivery of high quality products and services. The quality management program offers students the opportunity to develop skills required for a career in quality with an emphasis in management areas. Students will study areas such as accounting, general business, international business, organizational development, probability and statistics, control charts, problem solving, quality improvement teams, quality planning and systems management, cost of quality, applied statistics, and experimental design. This program provides excellent preparation for students to pursue certification through the American Society for Quality Control (ASQC) as a Certified Quality Technician or Manager.

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

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

INFORMATION
Contact the Technology Careers Department, Gammon Vocational-Technical Center, Room 220, telephone number (517) 483-1338.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<td>Code</td>
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<tr>
<td>ACCG 104</td>
<td>Accounting Information for Management 3</td>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business 3</td>
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<tr>
<td>BUSN 201</td>
<td>International Business 3</td>
</tr>
<tr>
<td>MGMT 304</td>
<td>Organizational Development 3</td>
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<tr>
<td>QUAL 100</td>
<td>Introduction to Quality Assurance 3</td>
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<td>QUAL 103</td>
<td>Probability and Statistics for Quality Assurance 4</td>
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<td>Applied Statistics for Quality Assurance 4</td>
</tr>
<tr>
<td>QUAL 215</td>
<td>Experimental Design in Quality Assurance 4</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 19 CREDITS</th>
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<tbody>
<tr>
<td>Choice 1</td>
<td>General Education Core Areas 12 Credits</td>
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<td>(See the GENERAL EDUCATION section above)</td>
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<td>Science/Technology Core Area 3</td>
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<td></td>
<td>Global Perspectives and Diversity Core Area 3</td>
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<table>
<thead>
<tr>
<th>CHOICE 2: Additional Related Courses</th>
<th>3 Credits</th>
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<tbody>
<tr>
<td>MGMT 223 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224 Human Resource Management</td>
<td>3</td>
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<tr>
<td>MGMT 225 Principles of Management</td>
<td>3</td>
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<tr>
<td>MGMT 228 Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 115 Metrology I</td>
<td>3</td>
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<td>QUAL 118 Metrology II</td>
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<tr>
<td>QUAL 121 Introduction to Statistical Process Control</td>
<td>3</td>
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<tr>
<td>QUAL 124 Quality Assurance in Service Organizations</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 206 Statistical Sampling</td>
<td>2</td>
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<tr>
<td>QUAL 209 Reliability</td>
<td>3</td>
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<tr>
<td>QUAL 221 Manufacturing Supervision</td>
<td>3</td>
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<tr>
<td>QUAL 239 Quality Improvement Projects</td>
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</table>

<table>
<thead>
<tr>
<th>CHOICE 3: Mathematics</th>
<th>4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 112 Intermediate Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 121 College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 122 College Algebra II and Trigonometry</td>
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</tr>
<tr>
<td>MATH 126 College Algebra and Trigonometry</td>
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</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>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
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<tbody>
<tr>
<td>QUAL 100</td>
<td>QUAL 105</td>
<td>QUAL 200</td>
<td>QUAL 205</td>
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<tr>
<td>QUAL 103</td>
<td>QUAL 203</td>
<td>QUAL 207</td>
<td>QUAL 215</td>
</tr>
<tr>
<td>ACCG 101</td>
<td>BUSN 201</td>
<td>QUAL 212</td>
<td>MGMT 304</td>
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<td>BUSN 118</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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<td>Lim.Ch.</td>
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</tbody>
</table>

Complete the indicated number of credits from each CHOICE listed below.
PROPERTY VALUATION AND ASSESSMENT ADMINISTRATION ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10175 (Effective Fall 1996–Summer 2001)

Property valuation assessment administrators are specialists trained to ascertain the value and proper use of real property for taxation purposes. They may also do appraisals of buildings and property values for private and public parties. LCC graduates of this program are prepared to work in an assessor's office, an equalization department, or a private appraisal firm.

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

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

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 41 CREDITS</th>
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<tr>
<td>AFCH 100</td>
<td>Introduction to Architecture</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 229</td>
<td>Public Relations</td>
<td>2</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>ECCH 200</td>
<td>Principles of Economics - Micro</td>
<td>3</td>
</tr>
<tr>
<td>GRET 205</td>
<td>Principles of Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
<td>3</td>
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<tr>
<td>PVA 231</td>
<td>Property Valuation and Assessment Administration I</td>
<td>3</td>
</tr>
<tr>
<td>PVA 232</td>
<td>Property Valuation and Assessment Administration II</td>
<td>3</td>
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<tr>
<td>PVA 284</td>
<td>Property Valuation and Assessment Administration III</td>
<td>3</td>
</tr>
<tr>
<td>SDCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
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<tr>
<td>WRTT 115</td>
<td>Business Communications</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 19–22 CREDITS</th>
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</thead>
</table>

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

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

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

CHOICE 2: Accounting 3–4 Credits

ACCG 101 Accounting Information for Management 3
ACCG 210 Principles of Accounting I 4

CHOICE 3: Real Estate 2–3 Credits

REAL 271 Introduction to Real Estate 2
REAL 274 Real Estate License Exam 3

CHOICE 4: Valuation/Assessment Related 12 Credits

ACCG 211 Principles of Accounting II 4
CIVL 129 Surveying 4
ECCH 200 Principles of Economics - Macro 3
GECH 211 Physical Geography 3
MATH 117 Math for Business 4
MKTG 290 Principles of Marketing 3
PVA 286 Applied Appraisal Concepts I 1
PVA 287 Applied Appraisal Concepts II 1
PVA 288 Income Approach to Value I 2

PVA 289 Income Approach to Value II 2
REAL 273 Real Estate Investment 3
REAL 275 Real Estate Financing 3
REAL 277 Property Management 3
REAL 278 Real Estate Inspection and Construction 3
REAL 279 Residential Appraisal 3
REAL 280 Real Estate Law 3

MINIMUM TOTAL 60

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Choose ACBB 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 into the program 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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<tbody>
<tr>
<td>ARCH 100</td>
<td>ECON 201 CISB 200 BUSN 229</td>
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<td>BUSN 118</td>
<td>MGMT 225 GRET 205 MGMT 234</td>
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<td>PVA 231</td>
<td>PVA 282 PVA 283</td>
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<tr>
<td>WRTT 115</td>
<td>Business Communications</td>
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</table>

PROPERTY VALUATION AND ASSESSMENT ADMINISTRATION CERTIFICATE OF COMPLETION

Curriculum Code: 10144 (Effective Fall 1996–Summer 2001)

Certificate holders qualify for certification testing and entry level positions, or may improve opportunities for advancement in this or a related area.

REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 12 CREDITS</th>
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</table>

PVA 281 Property Valuation and Assessment Administration I 3
PVA 282 Property Valuation and Assessment Administration II 3
PVA 283 Property Valuation and Assessment Administration III 3
PVA 284 Property Valuation and Assessment Administration IV 3

MINIMUM TOTAL 12

SUGGESTED COURSE SEQUENCE

<table>
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<tbody>
<tr>
<td>PVA 281</td>
<td>PVA 282</td>
<td>PVA 283</td>
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</table>
### REAL ESTATE

**ASSOCIATE IN BUSINESS DEGREE**

**Curriculum Code:** 10130 (Effective Fall 1996-Summer 2001)

Real estate agents rent, buy, and sell property for clients on a commission basis. Agents may study property listings to learn about what is for sale, keep informed of property values, market conditions and mortgage options; find prospects and develop leads and referrals; interview prospective clients to solicit listings; show property sites; draw up listings and contracts; negotiate loans on property; prepare marketing plans using advertising strategies such as open houses; and assist clients with available mortgage options.

#### PREREQUISITES

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

#### GENERAL EDUCATION

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

#### INFORMATION

Contact the Business Careers Department, Old Central Building, Room 219, telephone number (517) 483-1522.

#### REQUIREMENTS

**TOTAL: 39 CREDITS**

<table>
<thead>
<tr>
<th>CODE</th>
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<td>CISB 260</td>
<td>Information Systems Technology and Problem Solving</td>
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<tr>
<td>MGMT 254</td>
<td>Diversity in the Workplace – A Domestic and Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
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<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
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<tr>
<td>MKTG 260</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>REAL 273</td>
<td>Real Estate Investment</td>
<td>3</td>
</tr>
<tr>
<td>REAL 274</td>
<td>Real Estate License Exam</td>
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</tr>
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<td>REAL 275</td>
<td>Real Estate Financing</td>
<td>3</td>
</tr>
<tr>
<td>REAL 277</td>
<td>Property Management</td>
<td>3</td>
</tr>
<tr>
<td>REAL 279</td>
<td>Residential Appraisal</td>
<td>3</td>
</tr>
<tr>
<td>REAL 280</td>
<td>Real Estate Law</td>
<td>3</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 115</td>
<td>Business Communications</td>
<td>3</td>
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</table>

#### LIMITED CHOICE REQUIREMENTS

**TOTAL: 21–24 CREDITS**

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

**CHOICE 1:** General Education Core Areas (See Note 1) 6 Credits

(See the GENERAL EDUCATION section above)

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

**CHOICE 2:** Accounting 3–4 Credits

- ACCG 100 | Practical Accounting for Non Majors | 3 |
- ACCG 101 | Accounting Information for Management | 3 |
- ACCG 210 | Principles of Accounting I | 4 |

**CHOICE 3:** Real Estate Related (See Note 2) 16–17 Credits

- ARCH 190 | Introduction to Architecture | 3 |
- BILT 100 | Introduction to Construction | 3 |
- BUSN 118 | Introduction to Business | 3 |
- BUSN 229 | Public Relations | 2 |
- BUSN 295 | Small Business Management | 3 |
- CIVIL 150 | Surveying | 4 |
- ECON 201 | Principles of Economics - Micro | 3 |
- ECON 202 | Principles of Economics - Macro | 3 |
- LEGL 217 | Business Law III: Business Organizations | 3 |
- LEGL 221 | Real Estate Transaction | 3 |
- MATH 117 | Math for Business | 4 |

**MGMT 223** | Supervision | 3 |
**MGMT 225** | Principles of Management | 3 |
**MGMT 226** | Organizational Behavior | 3 |
**MGMT 230** | Time and Stress Management | 3 |
**MKTG 140** | Introduction to Advertising | 3 |
**REAL 271** | Introduction to Real Estate | 2 |
**REAL 273** | Real Estate Inspection and Consecution | 3 |

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

**MINIMUM TOTAL:** 60

#### NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose Property Valuation and Assessment Administration courses PVAA 281 through PVAA 284.
3. Choose CABS prefr courses of 100 or above.

#### SUGGESTED COURSE SEQUENCE

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

<table>
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<tr>
<td>MKTG 119</td>
<td>MKTG 120</td>
<td>MKTG 260</td>
<td>CISB 200</td>
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<tr>
<td>REAL 274</td>
<td>REAL 273</td>
<td>REAL 275</td>
<td>MGMT 234</td>
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<td>SPCH 110</td>
<td>REAL 280</td>
<td>REAL 279</td>
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</table>

### REAL ESTATE

**CERTIFICATE OF COMPLETION**

**Curriculum Code:** 10148 (Effective Fall 1996-Summer 2001)

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

**TOTAL: 15 CREDITS**

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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 275</td>
<td>Real Estate Financing</td>
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<tr>
<td>REAL 279</td>
<td>Residential Appraisal</td>
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<tr>
<td>REAL 280</td>
<td>Real Estate Law</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 5–6 Credits

- MKTG 119 | Marketing and Managing Your Professional Image | 3 |
- REAL 271 | Introduction to Real Estate | 2 |
- REAL 274 | Real Estate License Exam | 3 |
- REAL 277 | Property Management | 3 |

**MINIMUM TOTAL:** 20

#### SUGGESTED COURSE SEQUENCE

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<td>REAL 279</td>
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CHEMICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 15153 (Effective Fall 1996-Summer 2001)

Graduates with associate degrees in Chemical Technology are much in demand by the chemical industry. This program prepares students to work with chemists and chemical engineers in many settings. Research, development, and production of pharmaceuticals, agricultural chemicals, and plastics as well as related functions such as sales and technical writing are some of the opportunities that are available to persons with this type of training. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 of this catalog.

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

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 403, telephone number (517) 483-1392.

REQUIREMENTS

| COURSE
code | COURSE TITLE                        | TOTAL: 59 CREDITS |
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<td>General Chemistry Lecture I</td>
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<td>CHEM 152</td>
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<td>CHEM 251</td>
<td>Organic Chemistry Lecture I</td>
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<td>CHEM 272</td>
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<td>CNCS 101</td>
<td>PC Applications for Technology</td>
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<td>FIRE 120</td>
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<td>WRIT 122</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 Note 1) 0 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area 0
Speech Communication Core Area 0
Science Technology Core Area 0
Global Perspectives and Diversity Core Area 0

CHOICE 2: Humanities (See Note 2) 8 Credits

CHOICE 3: Social Science (See Note 2) 4 Credits

MINIMUM TOTAL 71

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. See the MICHIGAN Transfer Agreement in the Transfer Information section of this catalog for appropriate Social Sciences and Humanities courses.
MOLAR TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10212 (Effective Fall 1996-Summer 2001)

Graduates of this program will be able to work in areas that improve the quality of human life, such as the problems of human genetic defects and cancer, increased crop production, and cleanup of environmental pollution. This is a laboratory-intensive curriculum which focuses on the wide-ranging applications of recombinant DNA technology. Near the end of the program the Science Department will make every effort to arrange for summer internships in industrial or university research laboratories for students who wish to gain additional experience. If you plan to transfer to a four-year school, or to enroll in the 2+2 Biotechnology Program at Ferris State University, see an academic advisor or counselor before enrolling.

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

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

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1002.

REQUIREMENTS

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<td>BIOI 128 General Biology</td>
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<td>BIOI 275 Molecular Biology I</td>
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<td>CHEM 152 General Chemistry Lecture II</td>
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LIMITED CHOICE REQUIREMENTS

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<td>Global Perspectives and Diversity Core Area</td>
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CHOICE 1: General Education Core Areas (See Note 1) 0 Credits
(See the GENERAL EDUCATION section above)

CHOICE 2: Humanities (See Note 2) 6 Credits

CHOICE 3: Social Science (See Note 2) 4 Credits

CHOICE 4: Mathematics 4-5 Credits
MATH 121 College Algebra I | 4 |
MATH 126 College Algebra and Trigonometry | 5 |

MINIMUM TOTAL 70

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate Social Science and Humanities courses.

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

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<td>CHEM 162</td>
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<td>SPCH 150</td>
<td>WRIT 121</td>
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146 • LANSING COMMUNITY COLLEGE CATALOG 1996-97
**VETERINARY TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10287 (Effective Fall 1996–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, biomedical research institutions, zoological parks, and other animal care facilities. This curriculum is intended for students who have been admitted to the joint LCC/MSU Veterinary Technology Program. Admission is by application only.

**PREREQUISITES**

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

**GENERAL EDUCATION**

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

**INFORMATION**

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or the MSU Department of Veterinary Technology at (517) 353-7267.

**REQUIREMENTS**

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<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>

**TOTAL: 16 CREDITS**

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1: General Education Core Areas**

3-4 Credits

(See the GENERAL EDUCATION section above)

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

3 Credits

**CHOICE 2: Math Requirement**

4-5 Credits

- MATH 121 College Algebra I
- MATH 126 College Algebra and Trigonometry

5 Credits

**CHOICE 3: MSU Veterinary Medicine Courses**

39 Credits

Required Veterinary Medicine courses taken at Michigan State University (See Note 2)

**MINIMUM TOTAL**

62 Credits

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. The specific Veterinary Medicine courses necessary to fulfill this requirement are: VM 200, VM 201, VM 300, VM 301, VM 302, VM 303, VM 304. These courses must be taken at Michigan State University.
SIGN LANGUAGE

1996-1997 Catalog Lansing Community College

SIGN LANGUAGE INTERPRETER
ASSOCIATE IN APPLIED ARTS

Curriculum Code: 10282 (Effective Fall 1996–Summer 2001)

The Sign Language Interpreter is a person specially trained to facilitate communication between the deaf, hard of hearing, and hearing communities. Employment opportunities may be in educational settings, freelance, or contracted with agencies to provide interpreter services for deaf persons. State certification for interpreters is required by taking the Quality Assurance Examination as issued through the Division on Deafness in the Department of Labor for the State of Michigan. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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 find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175; telephone: (517) 483-1410.

REQUIREMENTS

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<td>ISCI 121</td>
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<td>MATH 201</td>
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<td>PSYC 200</td>
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<td>PSYC 205</td>
<td>Human Growth and Development</td>
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<td>SIGN 160</td>
<td>Orientation to Deafness</td>
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<td>SIGN 161</td>
<td>American Sign Language I</td>
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<td>SIGN 163</td>
<td>American Sign Language III (See Note 1)</td>
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<td>SIGN 165</td>
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<td>SIGN 167</td>
<td>Receptive Manual Communication (See Note 1)</td>
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<td>Deaf Culture and History</td>
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<td>Principles of Interpreting I</td>
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<td>SIGN 262</td>
<td>Principles of Interpreting II</td>
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<td>SIGN 263</td>
<td>Sign to Voice Interpreting I</td>
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<td>SIGN 264</td>
<td>Sign to Voice Interpreting II</td>
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<td>SIGN 267</td>
<td>Practicum I</td>
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<td>Independent Study in Sign Language I</td>
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<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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<td>SPCH 130</td>
<td>Dynamics of Communications</td>
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LIMITED CHOICE REQUIREMENTS

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MINIMUM TOTAL

| 72 |

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167.

SUGGESTED COURSE SEQUENCE

SIGN 160, SIGN 162, SIGN 163, ISCI 121, SIGN 250, SIGN 262,
SIGN 161, SIGN 166, SIGN 167, SIGN 164, SIGN 263, SIGN 264,
PSYC 200, PSYC 205, MATH 201, SIGN 261, SIGN 267, SIGN 268,
WRIT 121, WRIT 122, SOCL 120, SPCH 130, SIGN 295, Lim.Ch.

SIGN LANGUAGE INTERPRETER
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10187 (Effective Fall 1996–Summer 2001)

A Sign Language Interpreter is a person specially trained to facilitate communication between the deaf, hard of hearing, and hearing communities. State certification for interpreters is required by taking the Quality Assurance Examination as issued through the Division on Deafness for the State of Michigan.

REQUIREMENTS

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<td>SIGN 160</td>
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<td>American Sign Language I</td>
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<td>American Sign Language IV</td>
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LIMITED CHOICE REQUIREMENTS

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<td>SIGN 160</td>
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<td>SIGN 161</td>
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<tr>
<td>SIGN 162</td>
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<td>SIGN 163</td>
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<td>SIGN 164</td>
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<tr>
<td>SPCH 130</td>
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<tr>
<td>WRIT 121</td>
</tr>
<tr>
<td>WRIT 122</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

| 37 |

NOTES

1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167.

SUGGESTED COURSE SEQUENCE

SIGN 160, SIGN 162, SIGN 163, SIGN 164, SIGN 263, SIGN 264,
SIGN 161, SIGN 166, SIGN 167, SIGN 261, SIGN 267, SIGN 268,
Lim.Ch.

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**GENERAL TECHNOLOGY**  
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10213 (Effective Fall 1996-Summer 2001)

This curriculum is designed to provide an individual with a multi-disciplinary technical background. The technical courses and supporting courses that comprise this degree provide the flexibility to match the student's interests and skills necessary for job entry. For example, this curriculum is often pursued by apprentices who complete most of the requirements for this degree through their related training requirements and who also wish to earn an associate degree. Students interested in pursuing careers in a specific technical area should see a faculty advisor in their career choice.

**PREREQUISITES**

Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 57 of this catalog.

**GENERAL EDUCATION**

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

**INFORMATION**

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

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<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>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 110</td>
<td>Introduction to Quality Assurance</td>
<td>3</td>
</tr>
<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

1. **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

   **9 Credits**

2. **CHOICE 2:** Mathematics  
   - Intermediate Algebra  
   - Technical Math I  
   - Technical Math II

   **9 Credits**

3. **CHOICE 3:** Applied Technology Related (See Note 2)  
   - **23 Credits**

   **MINIMUM TOTAL**
   - **50 Credits**

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Contact an advisor in GVT 220 or call (517) 483-1336 for a listing of additional courses that may be applied toward this degree.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>I</th>
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<tbody>
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<td>MACH 135</td>
<td>DTDS 110</td>
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<tr>
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</tr>
</tbody>
</table>
TOURISM: AIRLINE AND TRAVEL AGENCY OPERATIONS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10229 (Effective Fall 1996–Summer 2001)

Travel agents, tour escorts, cruise line, and airline personnel plan trips and arrange lodging, modes of travel, and travel services for customers. They may specialize in foreign or domestic service, individual or group travel, or a specific geographical area. Travel customer service representatives are employed by airlines, cruise lines, tour companies, railroads, and tourism bureaus to provide travel information and arrange accommodations for tourists. They answer questions, offer suggestions, verify arrival/departure times, and provide literature on trips, excursions, sports events, concerts, and plays. Travel, tour, cruise and airline personnel may confer with customers by phone or in person, or plan trips for them in response to mail requests.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

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

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 43 CREDITS</th>
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<tr>
<td>CODE</td>
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</tr>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>TRVL 136</td>
<td>Introduction to Travel Agency Operations</td>
</tr>
<tr>
<td>TRVL 110</td>
<td>Travel Agency Ticketing Domestic/International</td>
</tr>
<tr>
<td>TRVL 120</td>
<td>North American Travel I</td>
</tr>
<tr>
<td>TRVL 125</td>
<td>Foreign Country Travel II</td>
</tr>
<tr>
<td>TRVL 130</td>
<td>Foreign Country Travel III</td>
</tr>
<tr>
<td>TRVL 131</td>
<td>Foreign Country Travel IV</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Computer Reservation Training</td>
</tr>
<tr>
<td>TRVL 150</td>
<td>Tourism/Travel Operations</td>
</tr>
<tr>
<td>TRVL 200</td>
<td>Profitable Travel Sales, Marketing, and Counseling</td>
</tr>
<tr>
<td>TRVL 210</td>
<td>Group Travel/Escort Operations</td>
</tr>
<tr>
<td>TRVL 215</td>
<td>Travel and Tourism Law and Current Events</td>
</tr>
<tr>
<td>TRVL 250</td>
<td>Advanced Computer Ticketing</td>
</tr>
<tr>
<td>TRVL 255</td>
<td>Advanced Sabre Training</td>
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LIMITED CHOICE REQUIREMENTS

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<td>TRVL 150</td>
</tr>
<tr>
<td>TRVL 200</td>
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<tr>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

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

CHOICE 1: General Education Core Areas      12 Credits
(See the GENERAL EDUCATION section above)
  Writing Core Area                             3
  Speech Communication Core Area               3
  Science/Technology Core Area                 3
  Global Perspectives and Diversity Core Area  3

CHOICE 2: Specific Travel Occupations (Choose 1 Subchoice)  11-12 Credits

Subchoice 4A: Tour Guide
  ACCG 210 Principles of Accounting I          4
  MKTG 119 Marketing and Managing Your Professional Image | 3
  TRVL 145 Introduction to Cruise Sales and Ground Transportation | 3
  TRVL 146 Seminar at Sea                        2
  TRVL 190 Internship and Seminar                3
  TRVL 220 International Relations               3

Subchoice 4B: Airline/Cruise Operations
  TRVL 135 Airlines/Airport Operations          3
  TRVL 145 Introduction to Cruise Sales and Ground Transportation | 3
  TRVL 146 Seminar at Sea                        2
  TRVL 190 Your Career/Flight Attendant          3
  TRVL 190 Internship and Seminar                3

Subchoice 4C: Travel Agent
  TRVL 145 Introduction to Cruise Sales and Ground Transportation | 3
  TRVL 146 Seminar at Sea                        2
  TRVL 170 Opening/Operatory/Managing a Travel Agency | 3
  TRVL 190 Internship and Seminar                3
  TRVL 220 International Relations               3
  TRVL 250 Travel Agency Accounting              2

Subchoice 4D: General Travel Industry Employment (See Note 1)

MINIMUM TOTAL 56

NOTES
1. Credits must be taken from Subchoice 4A, 4B, 4C and/or departmentally approved TRVL electives or other departmentally approved electives. No more than 11 credits may be granted for departmentally approved electives.

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

CERTIFICATE OF COMPLETION

Curriculum Code: 10262 (Effective Fall 1996–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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact Lansing Community College, Truck Driver Training Program, 2146 25th Street. Augusta, MI 48802. Program Director, John Theroux, telephone number (517) 731-4125.

REQUIREMENTS FOR ADMISSION TO THE TRUCK DRIVER TRAINING PROGRAM

Curriculum Code: 10715 (Effective Fall 1996–Summer 1997)

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 18 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 reviewed by 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 (TIP). The State of Michigan requires all truck drivers to have a Commercial Driver's License. Any person learning to drive a tractor-trailer unit (such as those operated by Lansing Community College) must be in possession of a TIP or a Temporary Instruction Permit. WE WILL PREPARE STUDENTS TO OBTAIN THEIR TIP DURING THE FIRST WEEK OF CLASS. Written tests will be administered by Secretary of State personnel in the LCC classroom.

Persons shall be considered ineligible for a TIP if they:

• Fail to pass the written examination.

• Have been charged in the 24 months immediately preceding application with a total of 12 or more points.

• Have had their license suspended or revoked in the 36 months immediately preceding application unless that suspension or revocation was due to a revocation by temporary medical condition, failure to appear for re-exam or failure to appear in court for a traffic violation, an unsatisfied judgement or a re-tau to fault 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 TIP 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 tabulation.

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 DOT 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 and 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 dismissed.

h. Students are subject to drug and alcohol testing as required by D.O.T. regulations.

i. The Truck Driver Training Program is a short streamlined program. Any previous driving experience along with some mechanical aptitude is beneficial to a student. APPLICANTS SHOULD KNOW HOW TO SHIFT A STRAIGHT STICK TRANSMISSION AND USE A CLUTCH PRIOR TO ATTENDING.

TRUCK DRIVER TRAINING PROGRAM REQUIREMENTS

Curriculum Code: 10262

REQUIREMENTS

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<tr>
<td>TDTP</td>
<td>Truck Train II</td>
<td>3</td>
</tr>
<tr>
<td>TDTP</td>
<td>Truck Train III</td>
<td>3</td>
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</tbody>
</table>

MINIMUM TOTAL: 9 CREDITS

NOTES

1. The Program provides 140 hours in range and highway driving and 60 hours in classroom instruction situations. Range training includes an over-the-road trip of over 1,000 miles, permitting the students to gain over-the-road experience.
TRANSFER INFORMATION

Students planning on transferring to a four-year institution should be aware that universities and colleges differ widely in the courses they accept for transfer. In order to achieve maximum transferability of courses, students should consult an academic advisor or counselor at the Counseling and Advising Center, Room 103 of the Arts and Sciences Building.

In addition, students intending to transfer should follow the transfer curriculum 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.

Curriculum 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 institutions' policies and program requirements.

Curriculum guides and additional transfer information may be obtained by returning the information request card attached to the back cover of this publication or by contacting:

LCC Admission Office
Room 232, Common Academic-Technical Center
Telephone: (517) 483-1200
Fax: (517) 483-9668
Internet: www.lcc.edu/Admissions

OR

LCC Counseling and Advising Center
Room 103, Arts and Sciences Building
Telephone: (517) 483-1191
Fax: (517) 483-9668
Internet: www.lcc.edu/Counseling

When requesting information, please indicate area(s) of study and transfer college/university choices.

Areas of study (majors) by which transfer curriculum guides are available are as follows:

Accountancy
Accounting
Actuarial Science
Administrative Assistant
Advertising
Agricultural and Natural Resources
Communication
Culinary Arts
Animal Science
 Apparel Design
Applied Liberal Studies
Architecture
Art
Art History
Athletic Training
Atmospheric, Oceanic, and Space Sciences
Audiology and Speech Sciences
Archeology and Historical Research
Management
Aviation Technology and Operations
Behavioral Science
Biochemistry
Biology
Biotechnology
Broadcasting
Building Construction Management
Business
Accounting
Accounting Information Systems
Administrative Banking
Computer Management Systems

Economics
Finance
Food Industry Management
Food Marketing
General Business Administration
Health Services Administration
Hospitality Services Administration
Human Resources Management
Industrial Management
Information Systems
Insurance Studies
Integrated Supply Management
Language and World Business
Logistics
Management
Marketing
Materials Management
Organizational Sciences
Production Operations Management
Public Administration
Purchasing Management
Quality Management
Real Estate Management
Small Business

Statistics
Chemistry
Child Development
Chiropractic, Pre-Professional
Clinical Laboratory Science
Communication
Interpersonal and Public Scientific and Technical Communication Arts
Computational Mathematics

Computer and Information Science
Computer and Mathematical Sciences
Computer Information Management
Computer Information Systems
Computer Science
Conservation
Construction Management
Court and Conference Reporting
Criminal Justice
Criminology
Crop and Soil Science
Dental Hygiene
Dentistry, Pre-Professional
Dietetics
Earth Sciences
Economics
Education
Elementary
Physical Science
Secondary
Allied Health
Biology
Business
Chemistry
Economics
Indoor Economics
Industrial Mathematics
Music
Technology

Speech Special

Engineering
Administration
Arts
Aeronautical Aerospace
Biosystems
Chemical
Civil
Computer
Electrical
Industrial
Material Science
Property Management
Mechanical
Mechanical
Nuclear
Paper
Physics
Psychology
Surveying

Engineering Technology
Automated
Automotive
Electrical/ Electronics
Heating, Ventilation, Air Conditioning and Refrigeration
Manufacturing
Product Design
Welding

English
Environmental and Natural Resources Policy Studies

Environmental Geology
Exercise and Sport Science
Facilities Management
Family and Consumer Resources
Family Community Services
Family Life Education
Family Studies
Fashion Merchandising
Fisheries and Wildlife

Faith
Science
Service Administration
Systems Economics and Management
Technology and Management
Forestry
Geography
Geology
Health Care Administration
Health Fitness in Preventative and Rehab Program
Health Information Management
History
Home Economics
Horticulture
Hospitality
Hotel and Restaurant Management
Human Resources Administration
Industrial
Environmental Health
Health and Safety Management
Technology
Information Systems
Interdisciplinary Studies
Interior Architecture
Interior Design
International Studies
James Madison
Journalism
Land Use Planning and Management
Landscape Architecture
Law, Pre-Professional
Liberal Arts
Management
Health and Fitness
Health Services
Organizational Development
Marketing
Mathematics
Mechanics
Medical Laboratory Sciences
Medical, Pre-Professional
Medical Technology
Merchandising Management
Mortuary Science, Pre-Professional
Music
Natural Resources
Nursing
Nursing Sciences
Occupational Therapy
Office Administration
Optometry, Pre-Professional
Packaging
Park and Recreation Resources
Pharmacy, Pre-Professional
Philosophy
Photography
Physical Therapy
Assistant
Political Science
Polymer Science and Technology
Printing Management/Marketing
Production Technology
Psychology
Public Administration
Public Relations
Public Resource Management
Quality Management

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Recreation
Recreational Management
Retail
Social Work
Sociology
Speech Pathology and Audiology
Sports Medicine
Surveying
Technical Communication

Colleges/universities for which transfer curricular guides are available are as follows (not all majors listed above are available at all transfer institutions):

Adrian College
Alma College
Andrews University
Aquinas College
Baker College
Bay de Noc Community College
Brooks Institute
Calvin College
Clark Atlanta University
Center for Creative Studies
Central Michigan University
Cleary College
Concordia College
Cosby Law School
Davenport College/Lansing
Eastern Michigan University
Ferris State University
GMU Engineering and Management Institute
Grand Valley State University
Johnson and Wales University
Kendall College of Art and Design
Lake Superior State University
Lawrence Technological University
Life Chiropractic College

MACRAO TRANSFER AGREEMENT

In 1973 the Michigan Association of Collegiate Registrars and Admissions Officers proposed the MACRAO Transfer Agreement. The MACRAO Transfer Agreement was created to simplify the transfer of students from one institution to another. The agreement stipulates that 30 semester credit hours of 100-level and above, compatible, general course work will be granted to smooth transfersability to participating universities. These credits will be applied toward a student's major or 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 6 semester hours minimum
- Social Science 6 semester hours minimum
- Humanities 6 semester hours minimum

The following establishes the approved list of LCC courses under the following major distribution requirements for the MACRAO Transfer Agreement. A student can be used to satisfy only one category even though it may appear in more than one category. Only courses in which at least a 2.0 is received may be applied to this agreement.

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)

   - ISCI 121 and 122 or ISCI 131 and 132
   - Courses in at least two (2) subject areas, with a minimum of one laboratory science course. NOTE: Underlined courses indicate a laboratory course.
   - ANAT 145, 151, 152, 201
   - ASTR 201
   - BIOL 121, 127, 128, 210, 260, 270
   - CHEM 151 and 153, 120, 125
   - GEOL 220, 221, 222, 230
   - ISCI 121, 122, 131, 322
   - MATH 121, 122, 129, 130, 141, 151, 152, 201
   - METH 220
   - MGR 203 and 204
   - PHSY 220
   - PHSY 222
   - PHYS 201 and 225, 215 and 225
   - STAT 170, 215

III. Social Science (minimum of eight (8) semester credit hours)

   Courses must be taken in more than one subject area

   Economics: ECON 120, 130, 140, 201, 222, 213

   Geography: GFG 120, 121, 200, 202, 203

   Political Science: POLS 120, 121, 200, 200, 205, 207, 208, 290

   Psychology: PSYH 101, 125, 250, 250, 251, 252

   Sociology/Anthropology: ANTH 200, 205, 270, 275, 276, CJUS 101, 102, 106

   GER 106, SOCL 120, 254, 255, 256, 260

IV. Humanities (minimum of eight (8) semester credit hours)

   This requirement may be fulfilled by taking one of the following combinations:

   - HIST 211 and 212 or 214
   - HUMS 211 and 212
   - HUMS 213 and 214
   - HUMS 215 and 216
   - HUMS 219 and 220
   - History: ECON 213, HIST 150, 210, 210, 211, 212, 214, 220, 230, 230
   - Humanities: HUMS 213, 214, 215, 220
   - Performing Arts: MUSC 199, 240, 241, 245, 246, 249, 251, THEA 210
   - Philosophy: PHIL 151, 152, 153, 211, 212, 265
   - Religion: RELG 211, 212, 241, 242, 250

NOTE: Students are advised to also review specific transfer curriculum guidelines. Some transfer institutions, for example, may require both a biological and physical science to satisfy the requirements for the degree.

For further information and advising, contact an LCC academic advisor or counselor located in Room 103 of the Arts and Sciences Building (517) 483-1904 or Room 206 of the Student Personnel Services Building (517) 483-1185.

The following four-year institutions are signatory to the MACRAO Transfer Agreement:

- Adrian College
- Albion College
- Alma College
- Aquinas College
- Baker College
- Calvin College
- Central Michigan University
- Cleary College
- Davenport College
- 'Detroit College of Business
- Eastern Michigan University
- Ferris State University
- GMU Engineering and Management Institute
- Grand Valley State University
- Hope College
- Kalamazoo College
- Lake Superior State University
- Lawrence Technological University
- Madonna University
- Michigan Christian College
- "Michigan State University
- Michigan Technological University
- Northern Michigan University
- Oakland University
- Olivet College
- Saginaw Valley State University
- "St. Mary's College
- "Siena Heights College
- Spring Arbor College
- Western Michigan University
- "Some limitations may apply. Check with individual college/university.

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HOW TO READ COURSE DESCRIPTIONS

Each course description has seven (7) categories of information as follows:
1. Course Code
2. Course Title
3. Number of semester credit hours
4. Semester prerequisite
5. Basic Skills prerequisite (not all courses have this category)
6. Course description
7. Semester planned

Basic skill levels required for enrollment. Involves student testing and/or advising before registration. Other prerequisites may be added. See Class Schedule or department each semester for current information.

Indicates when department plans to offer course, but does not guarantee that the course will be offered. See Class Schedule or department each semester for current information.

For example:

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<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>SEMESTER PREREQUISITE*</th>
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<td>ASTR 201</td>
<td>Introductory Astronomy</td>
<td>Basic Skills Prerequisite: Reading Level 3; Writing Level (See Class Schedule)</td>
<td>4</td>
</tr>
</tbody>
</table>

A non mathematical survey of astronomy. Topics include ancient astronomy, the night sky, telescopes, space exploration, the solar system, stellar evolution, neutron stars and black holes, galaxies and quasars, cosmology, and the expanding universe. The LCC planetarium and observatory augment laboratory activities which illustrate important concepts in astronomy. (F. Sp. Su)**

*Slash /) means 'or'; comma (,) means 'and.'
**F = Fall; Sp = Spring; Su = Summer

COURSE CODES USED IN DESCRIPTIONS

Courses are listed in course code order. The sequence is as follows:

- ACCG Accounting
- AERO Aerospace Studies
- AHCC Allied Health Courses
- AIBL American Institute of Banking, Lansing Area
- ANAT Anatomy
- ANTH Anthropology
- ARCH Architecture
- ARTS Art
- ARTS Art Seminars and Workshops
- ASTR Astronomy
- AUTO Automotive
- AVAF Aviation Airframe Maintenance
- AVCE Aviation Continuing Education
- AVEL Aviation Electronics
- AVFT Aviation Flight Training
- AVGM Aviation General Maintenance
- AVGS Aviation Ground School
- AVIR Aviation Instrument Repair
- AVPP Aviation Powerplant Maintenance
- AVST Aviation Simulator Training
- BDCS Business Development Seminars
- BIOL Biology
- BLDR Building Related
- BLDT Building Trades
- BUSN Business
- CABS Computer Applications Using Business Software
- CACR Court and Conference Reporting
- CHCE Continuing Health Careers
- CHDV Child Development
- CHEM Chemistry
- CHIN Chinese
- CMSE Community Health Services
- CISP Computer Information Systems for Business
- CIVL Civil Technology
- CJUS Criminal Justice
- CNCF Computerized Numerical Control Program
- COOF Cooperative Education
- CPOA Computer Office Applications
- CFSC Computer Science
- CUAU Credit Union Accounting and Insurance
- CUMA Credit Union Management
- DADD Dental Assistant/Dental Hygiene
- DANC Dance
- DAST Dental Assisting
- DHYG Dental Hygiene
- DTDS Drafting and Design
- ECDB Economics: Business
- EDUC Education
- ELCT Electronics Technology
- ELTE Electrical Technology
- EMSA Emergency Medical Services
- EMSE Emergency Medical Services Seminars
- EMTA Emergency Medical Technology
- ENGL English
- ENRI Enrichment
- ESLA English as a Second Language
- ESLT English as a Second Language: Technical
- FIRE Fire Science
- FREN French
- GEOG Geography
- GEOL Geology
- GERG Gerontology
- GRET Geographical Resource and Environmental Technology
- GRMN German
- HIST History
- HMFS Hotel/Motel and Food Service Operations
- HONR Honors
- HORT Horticulture
- HUMS Humanities
- HUSE Human Services
- HVAC Heating, Ventilating, and Air Conditioning
- IMDS Diagnostic Medical Sonography
- IMAG Photography Technology
- INAU Industrial Automation
- INSU Insurance
- INTD Interior Design
- IRAD Radiation Therapy Technology
- IRXT Radiologic Technology
- ISCI Integrated Science
- JAPN Japanese
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<tr>
<th>Acronym</th>
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<tr>
<td>JRNL</td>
<td>Journalism</td>
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<td>LABR</td>
<td>Labor Relations</td>
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<td>LAND</td>
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<td>Physical Fitness: Health/Fitness Wellness</td>
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<td>Truck Driver Training Program</td>
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<td>TRAV</td>
<td>Tourism: Airline and Travel Agency Operations</td>
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<td>VCBL</td>
<td>Vocabulary Improvement</td>
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ACCG 100 – ACCG 290 1996-1997 Catalog Lansing Community College

DESCRIPTIONS

ACCG 100 Practical Accounting for Non-Majors 3
Semester Prerequisite: None
The student will learn the bookkeeping procedures necessary for preparation of financial statements and payroll. Manual and computer systems will be covered. (F, Sp, Su)

ACCG 101 Accounting Information for Management 3
Semester Prerequisite: None
Students will learn to interpret financial statements and use this information for analysis, budgeting, and decision-making. (F, Sp)

ACCG 140 Individual Income Taxes 3
Semester Prerequisite: None
Students will complete individual income tax returns and supporting schedules according to the Internal Revenue Code. The focus is on the completion of forms rather than the theoretical aspects of the tax law. (F, Sp)

ACCG 160 Payroll Systems and Business Taxes 2
Semester Prerequisite: ACCG 100 Equivalent
This course covers laws affecting payroll, calculation of payroll and payroll taxes using both manual and computer payroll systems, preparation of tax forms for payroll taxes, sales and use taxes, and personal property taxes. (Su)

ACCG 210 Principles of Accounting I 4
Semester Prerequisite: MATH 060 Equivalent
Basic Skills Prerequisite: Reading Level 6, Writing Level 3, Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Principles of Accounting I is the first class of a two-semester sequence focusing on financial accounting including accounting for service organizations and merchandisers. Topics covered include the basic accounting cycle, financial reporting, accounting theory, and accounting for inventories, cash, receivables and payables, plant assets, and stockholders equity. (F, Sp, Su)

ACCG 211 Principles of Accounting II 4
Semester Prerequisite: 2.0 Minimum in ACCG 210, MATH 112 Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Principles of Accounting II is the second course in the two-semester accounting sequence. Topics include statement of cash flows, budgets and other managerial reports, capital budgeting, short-term decision-making, equity investments, time value of money, bonds, manufacturing accounting, job and process costing systems, and accounting for quality and cost management. (F, Sp, Su)

ACCG 220 Intermediate Accounting I 4
Semester Prerequisite: 2.0 Minimum in ACCG 211, Lotus Experience
The purpose of this course is to review and expand upon the concepts of Financial Accounting that were covered in the Principles course, 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 4
Semester Prerequisite: 2.0 Minimum in ACCG 220
This course provides an in-depth coverage of long-term assets and liabilities, financial instruments, leases, pensions, accounting for income taxes, stockholders' equity, earnings per share, and inflation accounting. (Sp)

ACCG 230 Cost Accounting 4
Semester Prerequisite: 2.0 Minimum in ACCG 211, ACCG 260
This course focuses on cost-volume-profit analysis, costing methods for service and merchandising businesses. Other topics include activity based costing, job order costing, responsibility accounting, budgeting, standards, variable vs. full costing, joint and by-products, process costing, spoilage, project control, and capital budgets. Computer applications are emphasized. (F)

ACCG 231 Managerial Accounting 4
Semester Prerequisite: 2.0 Minimum in ACCG 230
This course focuses on the accountant's role in the organization, cost information gathering, processing, and reporting for various decision and control purposes: pricing, cost allocation, project control, mix and yield variances, uncertainty, variance investigation, inventory management, cost management, strategic planning, and management control. (Sp)

ACCG 235 Budgeting 2
Semester Prerequisite: ACCG 211
This course covers the budget cycle of an organization, both public and private, from a managerial perspective. Topics covered include budgetary terms, concepts, and general format, performance budgeting, program budgeting, zero base budgeting, budgeting approval process, budgetary control, and the auditing phase of a budget. (F)

ACCG 240 Federal Income Tax I 4
Semester Prerequisite: 2.0 Minimum in ACCG 211, Lotus Experience
This course 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 3
Semester Prerequisite: ACCG 240
This course is the second in a two-semester sequence in federal income tax. This course deals with the taxation of corporations, partnerships, estates, trusts, and tax exempt entities from a historical and theoretical perspective as well as preparation of tax and information returns under current tax law. (Sp)

ACCG 245 Accounting Internship 2
Semester Prerequisite: Departmental Approval
This internship provides the student with on-the-job experience in the accounting field. It requires 128 hours of work experience. (F, Sp, Su)

ACCG 250 Advanced Accounting 4
Semester Prerequisite: 2.0 Minimum in ACCG 221/Departmental Approval
This course covers business consolidations, foreign currency accounting, and partnerships in depth. In addition, the course provides an overview of governmental and nonprofit accounting. (Su)

ACCG 251 Accounting Seminar 1
Semester Prerequisite: Departmental Approval
With this course, students will learn special topics of current interest. (F, Sp, Su)

ACCG 260 Microcomputer Accounting Systems 4
Semester Prerequisite: 2.0 Minimum in ACCG 210
Microcomputer Accounting Systems prepares students to work with and design information systems, and to use the scientific methods in problem solving. Issues and problems related to microcomputers and other technology on accounting systems are emphasized. Students work with systems flowcharts, manual and computerized accounting systems, database design, and problem solving with spreadsheets. (F, Sp, Su)

ACCG 266 Independent Study in Accounting 1
Semester Prerequisite: Departmental Approval
With this course, students will learn advanced accounting topics as a part of a class, an independent study, or a project. Grading criteria and course objectives are determined by the instructor. The course requires a minimum of either 16 classroom hours or 30 independent study hours. (F, Sp, Su)

ACCG 271 Principles of Finance 3
Semester Prerequisite: ACCG 211
This course emphasizes the short- and long-term decisions of a financial manager. Topics include working capital management, risk, cost of capital, capital markets, long-term debt, stocks and dividends, equity and debt financing, and international financial markets as these topics relate to obtaining financing for a business. (F, Sp)

ACCG 280 Governmental Accounting 4
Semester Prerequisite: ACCG 211
Applications of fund accounting principles are applied to governmental (local and state) and not-for-profit entities. Students learn skills necessary to understand the organization, accounting functions, auditing, and financial reporting practices of governmental and not-profit organizations. Governmental Accounting Standards Board (GASB) and Financial Accounting Standards Board (FASB) requirements are taught. (F)

ACCG 290 Auditing 3
Semester Prerequisite: ACCG 221/Departmental Approval
In this course, the student will learn the theory and practice of auditing according to generally accepted auditing standards. (F)
ACCG 295 CPA Review - Tax, Managerial and Cost, Government, and Nonprofit 1
Semester Prerequisite: Meet Requirement for CPA Exam
This course is designed to provide CPA exam candidates with a review of federal taxation, cost, managerial, governmental, and nonprofit accounting. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 296 CPA Review - Business Law 1
Semester Prerequisite: Meet Requirement for CPA Exam
This course is designed to provide CPA exam candidates with a review of business law, especially the provisions of the Uniform Commercial Code. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 297 CPA Review - Auditing 1
Semester Prerequisite: Meet Requirement for CPA Exam
This course is designed to provide CPA exam candidates with a review of audit concepts, assumptions, and procedures. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 298 CPA Review - Financial Accounting and Reporting 1
Semester Prerequisite: Meet Requirement for CPA Exam
This course is designed to provide CPA exam candidates with a review of the theory and practice of financial accounting and reporting for business enterprises. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

AERO 111 Organization of the U.S. Air Force 1
Semester Prerequisite: None
This course reviews the doctrine and mission of the U.S. Air Force and its history, organization, and structure. Oral and written communication skills will be developed. Includes a leadership laboratory. (F)

AERO 112 U.S. Strategic Offensive and Defensive Forces 1
Semester Prerequisite: None
This course reviews the mission and functions of specific Air Force commands and role of commands in U.S. Defense policy. It reviews the employment of contemporary military equipment and systems. Includes a leadership laboratory. (Sp)

AERO 211 The Development of Air Power: Ascension to Prominence 1
Semester Prerequisite: None
This course reviews the factors contributing to the change in nature of the military. It examines conflict and history of air power from its earliest beginnings through World War II. The evolution of air power concepts and doctrine is also reviewed. A leadership laboratory is included. (F)

AERO 212 The Development of Air Power: Key to Deterrence 1
Semester Prerequisite: None
This course examines the history of air power from the end of World War II through present times. It also reviews the role of technology in the growth of air power employment in military and non-military operations. Includes a leadership laboratory. (Sp)

AHCC 101 Patient Care Principles 3
Semester Prerequisite: Admission to Program. ANAT 145 Recommended
Principles of basic patient care are presented to assist the student in managing patients in the health care setting. Information and simulated practice will include surgical aseptic techniques, infection control procedures, taking vital signs, handling medical emergencies, and other practices emphasizing the physical and emotional aspects of basic patient care. (F, Sp)

AHCC 106 Introduction to Pathology 2
Semester Prerequisite: ANAT 145. Health Careers Applicant/Student
General principles of pathology are discussed, rather than specific disease entities, to develop a new way of thinking about disease processes. Concepts of disease processes and their effect on normal structure and function of the body are emphasized. (F, Sp)

AHCC 110 Pharmacology-Allied Health 2
Semester Prerequisite: Health Careers Applicant/Student
This course is designed to familiarize the student with common medications encountered in the health care occupations. Emphasis is on drug categories and the responsibilities associated with medication administration. (F, Sp, Su)

AHCC 111 Applied Electrocardiography 1
Semester Prerequisite: Allied Health Applicant/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 ECGs, cardiac pathology, and basic cardiac rhythm recognition will be presented. (F, Sp)

AIBL 101 Principles of Banking 3
Semester Prerequisite: None
This course is an introduction to the field of commercial banking, designed not only for newcomers to the field, but for students presently employed in banking who desire to broaden their knowledge and/or increase their opportunities for advancement. (F, Sp)

AIBL 120 Economics for Bankers 3
Semester Prerequisite: None
This course provides bankers with an introduction to the fundamental principles of economics. Special emphasis is placed on topics of importance to bankers. The text covers the basics of economic theory and examples of the application of economics to banking. (Sp)

AIBL 130 Financial Planning for Bankers 2
Semester Prerequisite: None
This course addresses the perspectives, principles, and practices of financial planning in an understandable, step-by-step format. Students will develop an understanding of the comprehensive process that exists at a customer's total financial picture and recommendations to achieve the customer's objectives. (F)

AIBL 160 Understanding and Selling Bank Products 2
Semester Prerequisite: None
Working from the customer's perspective, this course shows a student how to identify and practice six human relations skills that encourage smooth, clear, and personal communications. Includes the basic steps in selling information about bank products and product benefits (rather than features) that appeal to a customer, and how to identify customer needs. (Sp)

AIBL 170 Preparing for Supervision 1
Semester Prerequisite: None
This course is designed to help the employee (student) prepare for the transition to supervisor, and/or to help those who wish to evaluate their own capabilities and desires to move toward a supervisory role. (F)

AIBL 171 Customer Service for Bank Personnel 1
Semester Prerequisite: None
This course emphasizes the development of better communications skills to benefit employees, customers, and the bank. Students will learn effective ways of establishing contact, exploring customer needs, defining and resolving problems, and closing the encounter. (F)

AIBL 174 Personnel and the Law 1
Semester Prerequisite: None
This seminar is designed to provide an introduction and overview to the principles and application of laws affecting banking personnel policies and procedures. The seminar will be most applicable to bank personnel officers,-managers, branch managers, and supervisors. (F)

AIBL 175 Bank Security for Customer Contact Personnel 1
Semester Prerequisite: None
This course is designed to teach students how to prevent security problems from arising by developing good security habits. It develops students' ability to detect security threats and to handle them in a way that ensures personal safety and minimizes the loss of depositors' funds. (F)

AIBL 176 Compliance Management 1
Semester Prerequisite: None
This course takes students through the steps leading to an effective compliance program. The course provides guidelines for determining how the compliance function fits with the overall bank structure. It also explains how to implement a valid program and discusses ways to monitor and audit the program. (F)

AIBL 178 Problem Loans 1
Semester Prerequisite: None
This course outlines an effective program of loan analysis, points out the early warning signals of problem loans, and shows students how to minimize losses should a problem loan occur. (F)
AIBL 179 Consumer Bankruptcy 5
Semester Prerequisite: None
This course presents, in non-technical terms, the history and development of the bankruptcy code, the specific provisions of the 1978 bankruptcy amendments and Federal Judgeship Act affecting Chapters 7 and 13 filings, and the ways in which banks can minimize losses from customer bankruptcies. (Sp)

AIBL 180 Mortgage/Loan Documentation 2
Semester Prerequisite: None
This course emphasizes the basics of loan processing and underwriting. Students will develop skills necessary to conduct loan interviews, process loan applications, act on a loan decision, and close real estate loans. (Sp)

AIBL 206 Money and Banking 3
Semester Prerequisite: AIBL 120 (Departmental Approval)
This course presents a fundamental treatment of how money functions in the U.S. and world economies. Topics include the concept of money supply, role a bank plays as a money creator and participant in the nation's payment mechanism, monetary and fiscal policies. (F, Sp, Su)

AIBL 207 Consumer Lending and Loan Training 3
Semester Prerequisite: None
This course offers essential information about the maze of regulations that govern credit practices and reviews loan processing, cross-selling, and collections. Case studies and role plays are offered to acquaint students with effective loan interview skills and hands-on training to improve the quality of the credit decision. (F)

AIBL 208 Commercial Lending and Loan Documentation 3
Semester Prerequisite: AIBL 260 (Departmental Approval)
This course focuses on how the commercial lending business is organized, how it contributes to bank profitability, and the total commercial lending process. Students will learn the credit-granting process which will help ensure asset quality, avoid pitfalls, and protect the bank's integrity. (Sp)

AIBL 212 Analysis of Financial Statements 3
Semester Prerequisite: AIBG 210 (Equivalent)
Provides the opportunity to further develop the skills necessary to conduct a comprehensive and effective financial analysis of a business borrower in order to assess repayment capacity. (Sp)

AIBL 214 Law and Banking: Principles 3
Semester Prerequisite: None
This course examines legal principles and provides a general review of legal problems pertaining to business and banking. Includes contracts, consideration, statute of frauds, commercial paper, bank deposits, bank collections, sales, leases, agencies, and extracts from the uniform commercial code. (F)

AIBL 215 Law and Banking: Applications 2
Semester Prerequisite: AIBL 214 Recommended
This course is an introduction to laws pertaining to secured transactions, letters of credit, and the banking collection process. Students will review the legal implications of normal activities and transactions in banking operations, the impact of the law, and applicable bank regulations. (Sp)

AIBL 221 Branch Banking Series 3
Semester Prerequisite: None
A variety of topics are presented in this course to help new and prospective branch managers prepare for their new responsibilities. Credit, human resource management, managing sales in the branch, and marketing are presented to help students sharpen their skills and perform their jobs more effectively. (Sp)

ANAT 145 Introductory Anatomy and Physiology 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
An introductory course in human anatomy and physiology which combines lecture and laboratory experiences to provide a basic understanding of the structure and function of body systems. Designed for vocational programs, including dental assistant and medical transcriptionist, as well as non-science majors. (F, Sp, Su)

ANAT 151 Anatomy and Physiology I 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
First course of a two-semester sequence in human anatomy and physiology emphasizing the structure and function of cells and tissues, the skeletal, muscular, and nervous systems, and special sense organs. (F, Sp, Su)

ANAT 152 Anatomy and Physiology II 3
Semester Prerequisite: 2.0 Minimum in ANAT 151
The second of a two-semester sequence emphasizing structure and function of the endocrine, digestive, respiratory, circulatory, urinary, and reproductive systems. Includes fetal development and genetics. (F, Sp, Su)

ANTH 201 Human Anatomy 4
Semester Prerequisite: BIOL, CHEM Recommended
Basic Skills Prerequisite: Reading Level 5
A study of the anatomy of the human body that includes the structures of the skeletal, muscular, nervous, sensory, circulatory, respiratory, digestive, excretory, endocrine, and reproductive systems. (F, Sp, Su)

ANTH 270 Cultural Anthropology 3
Semester Prerequisite: SOCL 120
This course compares ways of life for societies worldwide using anthropological theory and 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. (F)

ANTH 275 Physical Anthropology and Archeology 3
Semester Prerequisite: SOCL 120
Introduces human biological and cultural evolution, mechanisms of evolution, biological and cultural evidence from the fossil record, culture as an adaptive mechanism, and modern human variation. (Sp)

ARCH 100 Introduction to Architecture 3
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course is for students with no previous experience in basic architectural drafting. Students will be introduced to the proper techniques of architectural line work, lettering, orthographic projection, and axonometric drawings. Techniques of architectural dimensioning, the use of symbols, and the production of a basic floor plan will be accomplished. (F, Sp, Su)

ARCH 101 Architectural Drafting I 4
Semester Prerequisite: ARCH 100 (Equivalent)
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course is the first in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques to draw a series of residential details. The development of professional quality drafting, lettering, research, and communication techniques will be emphasized. (F, Sp, Su)

ARCH 102 Architectural Drafting II 4
Semester Prerequisite: ARCH 101, ARCH 121 (Concurrently)
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course is the second in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques and knowledge of residential detailing to design and draft basic architectural design problems, residential floor plans, elevations, and building sections. (F, Sp, Su)

ARCH 121 Visual Communication I 3
Semester Prerequisite: ARCH 100 (Equivalent)
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
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
Semester Prerequisite: ARCH 121 Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course is a continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media. (F, Sp, Su)

ARCH 123 Visual Communication III
Semester Prerequisite: ARCH 122
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
The goal of this course is to use the students' previously obtained graphic production knowledge to realistically depict three-dimensional architectural spaces and related ornamentation. An emphasis on developing the use of light and shadow and the true depiction of textures and materials will be taught. (F, Sp)

ARCH 126 Model Building
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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 those based on study models, using readily available materials, to more sophisticated presentation models. (F, Sp, Su)

ARCH 128 Residential Planning
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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 evolution of design criteria programs, and the production of basic diagrams through finished concept drawings will be accomplished. (F, Sp)

ARCH 131 City Planning
Semester Prerequisite: None
This is an introduction to the field of urban and regional planning. The development of planning theory, processes, and practical problems 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 examined. (F, Sp)

ARCH 138 Architecture Portfolio
Semester Prerequisite: CANC 101/TECH 130, Second-Year Student
This course will allow students to prepare a portfolio of previous classroom and professional work to be used for employment interviews and/or transfer to four-year architecture programs. Portfolios will be prepared using a variety of graphic techniques and will introduce the students to computer-generated portfolio presentations. (F, Sp)

ARCH 141 Architectural History I
Semester Prerequisite: None
Beginning with ancient times, this course studies the major civilizations which have contributed to the development of the architecture of world civilizations. A wide variety of visual media will be used to present the major theories, works, personalities in architecture, and the decorative arts through the Renaissance. (F, Sp)

ARCH 142 Architectural History II
Semester Prerequisite: ARCH 141 Recommended
This course, the second in a series, examines the greatest works and principal figures in world architectural history from the 1600s forward. Using a variety of visual media, this course will look at the principal works, theories, and individuals who have had the greatest impact on architecture and decorative arts to the present day. (F, Sp)

ARCH 146 Preservation and Adaptive Reuse Architecture
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course is designed as an overview of the principles and practices of preservation, restitution, and adaptive re-use architecture. Students will have the opportunity to work on a project of their choosing while being introduced to research methods, publications, and examples of preservation and new uses for existing structures. (F, Sp)

ARCH 181 Barrier Free Design
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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
Semester Prerequisite: ARCH 100, 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
Semester Prerequisite: ARCH 102, ARCH 141
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course is the third of a four-part series. Residential and light commercial architectural drafting courses. Students will use previously obtained drafting skills, research, and presentation skills to design, detail, present, and draft a light commercial project from basic schematics to working drawings. (F, Sp, Su)

ARCH 202 Architectural Drafting IV
Semester Prerequisite: ARCH 201, ARCH 271 Concurrently
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course is the conclusion in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting skills, research, and presentation skills to complete the working floor plans, elevations, sections, and details for the light commercial projects started in the preceding course. (F, Sp, Su)

ARCH 211 Design Studio I
Semester Prerequisite: ARCH 101 Concurrently
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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, Su)

ARCH 212 Design Studio II
Semester Prerequisite: ARCH 211
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course will use the skills developed in ARCH 211 to expand the student's understanding and processes for designing three-dimensional architectural space. Using models and various graphical mediums, students will explore the effects of scale, circulation, light, color, and texture on the spaces and forms created. (F, Sp)

ARCH 213 Facilities Design
Semester Prerequisite: ARCH 101 Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
In this course, students will explore four and study the design theory behind a full range of structures used for office and manufacturing purposes. Systems of manufacturing and how they relate to the structures which house them will be studied. (F, Sp)

ARCH 221 Architectural DataCAD I
Semester Prerequisite: ARCH 100 Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This entry-level course introduces the computer-aided drafting and design software, DataCAD, on a PC computer system. Students will create basic residential plans using two-dimensional editing functions. DataCAD's AEC and 3-D Modeler will also be used for presentations and commercial drawing applications. No previous computer experience is necessary. (F, Sp, Su)
ARCH 222  Architectural DataCAD II  4
Semester Prerequisite: ARCH 221
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This advanced level course continues to develop the students' skills using the DataCAD software. Complex three-dimensional entities including contours, mesh surfaces, and surfaces of revolution will be used to construct advanced 3-D models and presentations. A complete overview of DataCAD's Macro Menus will also be introduced. (F, Sp)

ARCH 225  Architectural DataCAD Independent Study  2
Semester Prerequisite: ARCH 222, Approval Required
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This is an advanced-level, computer-aided drafting and design, independent study course, using DataCAD software. After completing all available structured DataCAD courses, the 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  4
Semester Prerequisite: ARCH 190/Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This entry-level course introduces AutoCAD, a PC-based computer graphics system, for architectural applications. No computer experience is needed. Students will concentrate on two-dimensional drawing and editing functions for creating floor plans, elevations, and building sections. An introduction to three-dimensional modeling techniques will also be covered. (F, Sp, Su)

ARCH 232  Architectural AutoCAD II  4
Semester Prerequisite: ARCH 231
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course is a continuation of AutoCAD I. Complex three-dimensional shapes and solids will be used to model designs for presentation graphics. The rendering program AutoShade, will be used to realistically enhance the models. An introduction to AutoLISP programs will also be covered. (F, Sp, Su)

ARCH 235  Architectural AutoCAD Independent Study  2
Semester Prerequisite: ARCH 232, Approval Required
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This is an advanced-level, computer-aided drafting and design, independent study course, using AutoCAD software. After completing all available structured AutoCAD courses, the student will outline, research, design, and construct a project of his or her own selection, with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 237  Architectural Computer Rendering  3
Semester Prerequisite: ARCH 222/ARCH 232
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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 renderings. (F, Sp, Su)

ARCH 241  Architectural AES Computer Graphics I  4
Semester Prerequisite: ARCH 190/Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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, Su)

ARCH 242  Architectural AES Computer Graphics II  4
Semester Prerequisite: ARCH 241
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course will build on the knowledge gained in ARCH 241 and will add additional applications in modeling, file management, plotting, and rendering. (F, Sp)

ARCH 245  Architectural AES Independent Study  2
Semester Prerequisite: ARCH 242, Approval Required
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This is an advanced-level, computer-aided drafting and design, independent study course using AES software. After completing all available structured AES courses, the student will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 251  Architectural MicroStation I  4
Semester Prerequisite: ARCH 190/Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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
Semester Prerequisite: ARCH 251/Equivalent
This is an intermediate-level computer graphics course. Using the MicroStation software, students will learn to create and manipulate 3-D drawing surfaces and solids, 3-D cells, rendering, lighting, material tables, pattern mapping, and object motion. Upon completion of this class, students will be able to create, manipulate, and render 3-D models. (Sp)

ARCH 255  MicroStation Independent Study  2
Semester Prerequisite: ARCH 252, Approval Required
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This is an advanced-level, computer-aided drafting and design, independent study course using MicroStation software. After completing all available structured MicroStation courses, the student will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 271  Structural Theory  4
Semester Prerequisite: ARCH 101/Concurrently
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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, Su)

ARCH 273  Environmental Systems  4
Semester Prerequisite: ARCH 101/Concurrently
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
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, Sp)

ARCH 274  Architectural Professional Practice  3
Semester Prerequisite: ARCH 101
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 276  Alternative Structures  3
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
The study of post and beam, underground, stress skin, and other alternative methods of construction will be studied in this course. (F, Sp)

ARCH 278  Energy Efficient Design  4
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
An examination of all commonly used passive and active energy systems, energy efficient design, and the materials relating to insulation of residential and commercial construction will be reviewed in this course. (F, Sp)
ARCH 283 Materials of Construction
Semester Prerequisite: ARCH 101/Equivalent
This course consists of the evaluation of the various characteristics of all materials commonly used in residential and light commercial structures. Students will develop a sensitivity to the use of building products based upon knowledge of their properties, limitations, and availability. (F, Sp)

ARCH 295 Architectural Independent Study
Semester Prerequisite: Second-Year Student 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. The approval and the guidance of the instructor, the student will outline, research, design, and construct a project of his or her own selection. (F, Sp, Su)

ARCH 297 Architectural Independent Study
Semester Prerequisite: Second-Year Student 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 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 005 Computer Graphics Lab
Semester Prerequisite: Currently Enrolled Art Student, Departmental Approval
This course determines the time for the student's attendance in the Computer Graphics Laboratory; it is a course. ARTS 005 enables the student to utilize the laboratory equipment and software to create individualized computer graphics for art courses conducted in a traditional classroom environment. (F, Sp, Su)

ARTS 010 Figure Lab
Semester Prerequisite: Currently Enrolled Art Student, Departmental Approval
ARTS 010 determines the time for the student's attendance in the Figure Laboratory; it is a course. ARTS 010 enables the student to utilize the laboratory equipment and figure model to create individualized artwork for art courses conducted in a traditional classroom environment. (F, Sp)

ARTS 102 Two-Dimensional Design
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 3
Universal elements and principles of two-dimensional design, design theory, and vocabulary, with emphasis on composition and its application to black and white and color media. (F, Sp, Su)

ARTS 103 Three-Dimensional Design
Semester Prerequisite: ARTS 102
Line, shape, form, value, color, and texture are explored using a variety of three-dimensional materials and applying principles and elements of design. (F, Sp, Su)

ARTS 131 Drawing I
Semester Prerequisite: ARTS 103/MAG 112/Concurrently
An introductory studio course using a variety of media and methods that introduces both realism and abstraction. Fundamental elements of drawing, concepts of perception, and expressing properties of various media are stressed. Basic principles of one- and two-point perspective are covered. (F, Sp, Su)

ARTS 132 Life Drawing
Semester Prerequisite: ARTS 131
Basic concepts, approaches, and techniques involving drawing the human figure, using materials such as pencil, ink, charcoal, and conte crayon. (F, Sp, Su)

ARTS 137 Drawing II
Semester Prerequisite: ARTS 131
Further development of the drawing process with emphasis on commercial design topics. This includes various theories, media, and techniques such as perspective drawing, color rendering, and marker techniques. (F, Sp, Su)

ARTS 140 Printmaking I
Semester Prerequisite: ARTS 102/Concurrently
An introduction to the various printmaking techniques, tools, and vocabulary of the printmaker. Includes etching, collagraph, embossing, monoprinting, and linocut. (F, Sp)

ARTS 141 Printmaking II
Semester Prerequisite: ARTS 140
Students expand on processes and concepts introduced in Printmaking (ARTS 140). Emphasizes refining technical skills and conceptual development. (F, Sp)

ARTS 145 Screen Printing I
Semester Prerequisite: ARTS 102/Concurrently
An introduction to basic silk screen print processes with an emphasis on registration techniques. Includes constructing a frame and making a photoplate transparency. (F, Sp)

ARTS 146 Screen Printing II
Semester Prerequisite: ARTS 145
Students expand on processes and concepts introduced in Screen Printing I (ARTS 145). Exploration and experimentation with more complex techniques and problems. Includes an in-depth study of photoprint processes in combination with paper, cut film, and block-out stencils. (F, Sp)

ARTS 151 Computer Graphic Art
Semester Prerequisite: ARTS 102/MAG 114, ARTS 131
A beginning course for students interested in creating art on the computer. Basic and intermediate skills in graphic design and multimedia. (F, Sp, Su)

ARTS 162 Typography and Layout Indication
Semester Prerequisite: ARTS 102/Concurrently
Use of type in communication design with an emphasis on creativity. Includes the history of typography, type style identification, classification, and selection. Students will be introduced to the tools, materials, and techniques necessary to professionally render comprehensive layouts. (F, Sp, Su)

ARTS 171 Computer Graphics for Photography
Semester Prerequisite: ARTS 102/MAG 114, Departmental Approval
An introduction to computer manipulation of photographic images. Students must show evidence of design skills to receive departmental approval. (F, Sp, Su)

ARTS 175 Electronic Design I
Semester Prerequisite: ARTS 162/Concurrently
An introductory hands-on course designed to provide students with a working knowledge of page layout and object-oriented illustration software utilizing Macintosh computers. Emphasis is on design using electronic publishing applications. (F, Sp, Su)

ARTS 175 Electronic Design II
Semester Prerequisite: Departmental Approval
An advanced hands-on course in electronic publishing techniques with an emphasis on graphic design and layout. Explores concepts introduced in Electronic Design I (ARTS 175). (F, Sp)

ARTS 177 Computer Prepress Production Techniques
Semester Prerequisite: ARTS 171
Digital prepress production techniques for computer-generated media, including color separation, color trapping, resolution, paper, and film output, and digital file preparation. Instruction includes an overview of computer system components and peripheral devices, printing terminology, and processes covered. Course emphasis is on professional knowledge and accuracy. (F, Sp)

ARTS 189 Graphic Design I
Semester Prerequisite: ARTS 102, ARTS 162
An overview of the designer's role in developing design concepts for print, including the typographic and its varied applications. Color, paper, and type selection for the individual client will be emphasized. (F, Sp, Su)

ARTS 189 Graphic Design II
Semester Prerequisite: ARTS 137, ARTS 175, ARTS 189
An overview of publication and advertising design and the designer's role in the creative organization of typography, photography, and illustration. Emphasis on editorial concept, format, and design considerations. (F, Sp)

ARTS 189 Graphic Design III
Semester Prerequisite: ARTS 181 MGTG 140
An advanced course involving corporate image and the design of promotional graphics, both two- and three-dimensional. Utilizes innovative design and media considerations. Students will work through the design process from initial concept to final presentation. (F, Sp)

ARTS 190 Metallurgy and Framing Techniques
Semester Prerequisite: None
An overview of the various materials and techniques for framebuilding and framing artwork. Students will apply demonstrated techniques in massing and framing their work. (F, Sp)
ARTS 195 Employment and Business Issues for Artists 2
Semester Prerequisite: None
An introduction to business, legal, and marketing issues relevant to visual artists. Students will be introduced to copyright, contract and negotiation concerns, and basic record keeping. Job search/marketing skills content, including resumes, letter writing, and self-promotion will focus on marketing individual presentations, to specific employment or free-lance goals. (F, Sp)

ARTS 200 Painting I 3
Semester Prerequisite: ARTS 102, ARTS 131
An introduction to oil and acrylic painting concepts in the Western tradition ranging from Renaissance to Contemporary. Examines basic materials, tools, techniques, and modes of expression. (F, Sp, Su)

ARTS 201 Painting II 3
Semester Prerequisite: ARTS 200
A continuation of Painting I, ARTS 200 emphasizing more advanced techniques and increasingly complex problems in painting. A variety of media, techniques, and approaches are encouraged. (F, Sp, Su)

ARTS 293 Figure Painting 3
Semester Prerequisite: ARTS 102, ARTS 132
A studio course in the human figure using various media such as oil paint, watercolor, acrylic paint, and pastels. (F, Sp)

ARTS 294 Watercolor I 3
Semester Prerequisite: ARTS 102, ARTS 131
An introduction to the art of transparent watercolor. Examines paper characteristics, degrees of wetness, brushes and tools, and various techniques in producing watercolor art works. (F, Sp)

ARTS 295 Watercolor II 3
Semester Prerequisite: ARTS 204
A continuation of Watercolor I, ARTS 204 emphasizing more advanced techniques and increasingly complex problems using watercolor. (F, Sp)

ARTS 296 Advanced Watercolor 3
Semester Prerequisite: ARTS 205
An opportunity for the advanced student to continue with his or her personal exploration and development of watercolor skills under the guidance of an instructor. (F, Sp)

ARTS 213 Illustration/Black and White 3
Semester Prerequisite: ARTS 102, ARTS 132
Illustrative techniques utilized to convert preliminary pencil drawings to finished ink drawings. Includes a variety of contemporary black and white techniques in both solid line and wash. Emphasis on sound draftsmanship and solving simple problems through illustration. (F, Sp)

ARTS 214 Illustration/Color 3
Semester Prerequisite: ARTS 200, ARTS 203, ARTS 204, ARTS 213
Full-color illustration techniques in transparent and opaque, watercolor, colored pencil, and mixed media. Stylized drawing techniques and design-oriented composition assignments, with an emphasis on problem solving for specific outlets such as editorial and collateral materials. (F, Sp)

ARTS 216 Humorous Illustration I 3
Semester Prerequisite: ARTS 132
Cartoon illustrations from spot illustration to complex compositions. Emphasis on strong stylized drawing, dramatic exaggerated action, simple but imaginative characteristics, and unobtrusive ink rendering techniques. Exercises in pencil, fiber-tipped pen, and brush and ink. (F, Sp, Su)

ARTS 217 Humorous Illustration II 3
Semester Prerequisite: ARTS 216
This course is designed to expand the student's cartooning and illustration skills through a variety of projects. These projects will reflect some of the many uses of humorous illustration (Sp)

ARTS 221 Airbrush Techniques I 3
Semester Prerequisite: None
Introduction to the operation and techniques of the airbrush in shading and creating textures in both black and white and color. Assignments include using various masking methods and freestyle techniques. (F, Sp, Su)

ARTS 222 Airbrush Techniques II 3
Semester Prerequisite: ARTS 102, ARTS 131, ARTS 221
A continuation of Airbrush Techniques I, ARTS 221 with an emphasis on more complex airbrushing problems including product rendering and textile applications with work in areas of specialization. (F, Sp, Su)

ARTS 232 Computer Graphics/2-D Animation 3
Semester Prerequisite: ARTS 216/IMAG 101/IMAG 111, ARTS 151, Departmental Approval
This course explores 2-D animation using the computer as a tool. Emphasis is on the history, theory, and principles of animation. (F, Sp)

ARTS 233 Computer Graphics/3-D Interactive 3
Semester Prerequisite: ARTS 232, Departmental Approval
This course explores 3-D interactive modeling, rendering techniques, and animation on a desktop graphics system. Introduction of the principles of designing digital media. (F, Sp)

ARTS 234 Computer Graphics/3-D Animation 3
Semester Prerequisite: ARTS 151, ARTS 131, Departmental Approval
An introduction of 3-D modeling, rendering techniques, and animation on a desktop graphics system. Introduction of the principles of designing digital media. (F, Sp)

ARTS 235 Computer Graphics/3-D Animation II 3
Semester Prerequisite: ARTS 234, Departmental Approval
A continuation of 3-D Animation I, ARTS 234. Emphasis on creation of more complex models and animations. Introduction of sound and for 3-D animation. (F, Sp)

ARTS 240 Basic Art for Elementary Teachers 3
Semester Prerequisite: None
Especially for elementary school teachers responsible for the student art experience. Emphasis on developing a greater art appreciation, awareness of art forms and competency working with a variety of art media. Covers the creative and mental growth of children and their needs in an art situation. (F, Sp, Su)

ARTS 252 Advanced Illustration 3
Semester Prerequisite: ARTS 214
An opportunity for the advanced student to continue with his or her personal exploration and development of illustration skills under the guidance of an instructor. The student must submit written application and portfolio to receive departmental approval. (F, Sp)

ARTS 269 The Portfolio 2
Semester Prerequisite: Departmental Approval
The student will assemble his or her best work under instructor supervision into a cohesive, relevant presentation for the purpose of securing employment in a chosen career area. This course is intended to be a final course in the Art Program. (F, Sp)

ARTS 270 Computer Graphics Independent Study 3
Semester Prerequisite: Departmental Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive departmental approval. Cannot be audited. (F, Sp, Su)

ARTS 272 Printmaking Independent Study 3
Semester Prerequisite: Departmental Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive departmental approval. Cannot be audited. (F, Sp, Su)

ARTS 276 Art Independent Study 3
Semester Prerequisite: Departmental Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive departmental approval. Cannot be audited. (F, Sp, Su)

ARTS 281 Art Internship 3
Semester Prerequisite: Departmental Approval
An off-campus field study. Students will gain practical 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)

APWS 120 Basic Drawing 1
Semester Prerequisite: None
An introductory course using a variety of materials including pencil, charcoal, and ink. For non-majors. (F, Sp, Su)
ARWS 131 Computer Graphics Workshop
Semester 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 Quark Xpress
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Quark Xpress software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 133 Introduction to PageMaker
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Aldus PageMaker software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp, Su)

ARWS 134 Introduction to FreeHand
Semester Prerequisite: None
A condensed hands-on workshop designed to provide the student with a working knowledge of Aldus FreeHand software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 135 Desktop Design Fundamentals
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Illustrator software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (Sp)

ARWS 136 Introduction to Adobe Illustrator
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Illustrator software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 137 Introduction to Adobe Photoshop
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Photoshop software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F)

ARWS 138 Introduction to MacroMind Director
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of MacroMind Director software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (Su)

ARWS 141 Watercolor Workshop
Semester Prerequisite: None
A condensed learning experience introducing the student to the art of transparent watercolor. Emphasis is on the use of different papers, degrees of wetness, tools, and techniques. Students will progress to more complex problems as ability develops. (F, Sp, Su)

ARWS 145 Landscape Painting and Drawing
Semester Prerequisite: None
Emphasis is on the use of color, perspective, and compositional strategies of the landscape. Most sessions spent in the field. All types of media are acceptable. (Su)

ARWS 200 Handmade Paper
Semester Prerequisite: None
A condensed learning experience introducing the student to the art of handmade paper. Emphasis on pulp making and casting techniques. Students will progress to more complex problems as ability develops. (F, Sp, Su)

ARWS 221 Calligraphy I
Semester Prerequisite: None
Introduces the student to the art of fine writing using italic pens. Emphasis on hand lettering, surveying different styles and scripts used in early manuscripts, and adaptation to modern use. (F, Sp)

ARWS 222 Calligraphy II
Semester Prerequisite: ARWS 221
A continuation of Calligraphy I (ARWS 221) emphasizing a variety of tools, materials, and techniques. Students will progress to more complex problems and experiment with aesthetic expression as skills progress. (Sp)

ARWS 224 Cartooning Workshop
Semester Prerequisite: None
Emphasizes simple but imaginative characterizations and dramatic exaggerated action in a variety of media including pencil, stippled pen, and brush and ink. Previous drawing experience helpful. (F, Sp)

ASTR 201 Introductory Astronomy
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Main Level (See Class Schedule)
A non-mathematical survey of astronomy. Topics include ancient astronomy, the night sky, telescopes, space exploration, the solar system, stellar evolution, neutron stars and black holes, galaxies and quasars, cosmology, and the expanding universe. The LCC planetarium and observatory augment laboratory activities which illustrate important concepts in astronomy. (F, Sp, Su)

AUTO 100 Auto Service I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 3; Main Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course is intended to provide the student with an extensive orientation to an automotive repair facility, while developing tool and equipment usage skills needed to advance in the automotive repair field. (F, Sp, Su)

AUTO 191 Basic Automotive Seminar
Semester Prerequisite: None
This seminar is designed to introduce the student to the techniques and requirements of basic automotive maintenance. (F, Sp, Su)

AUTO 110 Auto Electrical Theory
Semester Prerequisite: AUTO 100; Concurrently/Approve
This course presents the fundamental principles of theory, operation, construction, diagnosis, service, and repair of the electrical components of automobiles and trucks. (F, Sp)

AUTO 120 Auto Drive Train
Semester Prerequisite: AUTO 100; Concurrently/Approve
This course presents the techniques necessary to service and repair manual transmissions, both rear and front-wheel drive, clutches, drive shafts, and differentials. (F, Sp)

AUTO 121 Automatic Transmissions
Semester Prerequisite: AUTO 100; AUTO 120; Approval
A course in rear and front-wheel drive automatic transmission repair covering theory of operation, vocabulary, diagnosis techniques, repair procedures, and testing methods. (F, Sp)

AUTO 122 Advanced Transmission
Semester Prerequisite: AUTO 121
This course focuses on larger transmissions such as those used in large vans and medium-duty trucks. Four-wheel drive automatics are included. (F, Sp)

AUTO 130 Automotive Engines
Semester Prerequisite: AUTO 100; Concurrently/Approve
This course provides a background in principles, design, operation, and service procedures of gasoline engines and prepares students for practical experience in engine maintenance and service. (F, Sp)

AUTO 133 Small Engine Repair
Semester Prerequisite: None
This is a basic course covering servicing and repair of two-cycle and four-cycle small gas engines. Each student is required to supply a small engine for laboratory work. (F, Sp, Su)

AUTO 136 Marine Engine Repair
Semester Prerequisite: None
This course covers the basics of outboard engine servicing including carburation, ignition, and troubleshooting malfunctions. (F, Sp, Su)

165
AUTO 140  Automotive Brakes  2.5
Semester Prerequisite: AUTO 100/Concurrently/Approval
This course covers servicing both drum and disc brakes, including adjustment, shoe replacement, drum and disc turning, pad replacement, and hydraulic system service. Included is the basic theory and service of anti-lock brakes. (F, Sp)

AUTO 150  Automotive Suspension  2.5
Semester Prerequisite: AUTO 100/Concurrently/Approval
This course covers the suspension systems on automobiles and light trucks. Topics include insulation, parts replacement, and extensive instruction on the use of four-wheel alignment equipment. (F, Sp)

AUTO 160  Auto Air Conditioning  2.5
Semester Prerequisite: AUTO 110/Approval
Instruction in the operating principles of auto air conditioning systems and repair procedures. (F, Sp)

AUTO 165  General Auto Mechanics  2.5
Semester Prerequisite: None
Automobile owners will gain a better understanding of the automobile and be able to make some repairs. Areas covered include preventive maintenance, tune-ups, brakes, engines, electrical systems, drive lines, front end, and steering. (F, Sp, Su)

AUTO 180  Auto Body Welding/Metal Finishing  5
Semester Prerequisite: None
This course presents metal welding as it applies to auto body repair. Included are gas, spot, and wire-fed welding, brazing, heat shrinking, and plasma arc cutting. This course also teaches basic sheet metal repair, body shop tools and their proper use, along with materials used to repair minor damages. (F, Sp, Su)

AUTO 182  Major Collision Repair  5
Semester Prerequisite: AUTO 180
This course teaches the restoration of a collision-damaged automobile to its original condition, including estimating the total job, glasswork, and painting. Instruction in repair of larger, dented panels with an emphasis on replacing panels. (F, Sp, Su)

AUTO 184  UniBody and Frame Repair  2.5
Semester Prerequisite: AUTO 180
This course is an introduction to the basics of frame straightening, and covers aligning the frame or uniblized body to original specifications. Analyzing and gauging damage is included. (F, Sp)

AUTO 185  Basic Auto Painting  2.5
Semester Prerequisite: None
This is an auto painting course designed to teach basic refinishing procedures. The student must refinish at least one panel in acrylic enamel and acrylic lacquer by the end of the course. (F, Sp, Su)

AUTO 186  Advanced Painting  5
Semester Prerequisite: AUTO 195
This course teaches advanced auto painting techniques for spot repair, color matching, and troubleshooting—including auto painting techniques for refinishing a complete auto in enamel and acrylic lacquer. Includes estimating the cost of materials and overhead costs of operating a paint shop. (F, Sp, Su)

AUTO 188  Auto Body Repair and Painting  4
Semester Prerequisite: AUTO 190, AUTO 182, AUTO 185
This is a combined course of auto body repair and painting. Students will have an opportunity to practice the techniques learned in Auto Body Welding/Metal Finishing (AUTO 180) and Basic Auto Painting (AUTO 185). (F, Sp, Su)

AUTO 215  Engine Performance/Tune-Up  5
Semester Prerequisite: AUTO 110/Approval
A broad-based course covering the technology necessary to diagnose and repair driveability and electrical and fuel-related problems in automobiles and light trucks. This course will include instruction on carbonizers and mechanical fuel pumps. (F, Sp)

AUTO 223  Automotive Computers  5
Semester Prerequisite: AUTO 215
This course covers the theory of operation and repair procedures on computerized engine and fuel control systems and operation of duty-cycle meters, tachometers, computerized engine analyzers, digital high impedence multimeters, and other equipment used in servicing electronic engine-control systems. (F, Sp)

AUTO 230  Supplemental Inflatable Restraint/ABS Brake Systems  3
Semester Prerequisite: AUTO 110, AUTO 140, AUTO 225
For experienced technicians with component electrical skills. This course will train technicians in the new General Motors Air Bag Systems and ABS Brake Systems. Will include hands-on troubleshooting of system faults, testing and calibrating of system codes, proper handling procedures for system components, and proper disposal procedures for inflator modules. (F, Sp)

AUTO 272  Tune-Up and Electrical Laboratory  6
Semester Prerequisite: AUTO 215, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in tune-up and electrical repair. (F, Sp)

AUTO 273  Brake Laboratory  6
Semester Prerequisite: AUTO 140, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in brake repair. (F, Sp)

AUTO 274  Suspension Laboratory  6
Semester Prerequisite: AUTO 150, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in suspension repair. (F, Sp)

AUTO 276  Automatic Transmission Laboratory  6
Semester Prerequisite: AUTO 122, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in transmission repair. (F, Sp)

AUTO 280  Automotive Service Laboratory  8
Semester Prerequisite: AUTO 100, Instructor Approval
This laboratory course is designed to provide work experience and develop trade-entry skills in general and light-duty repair. (F, Sp)

AUTO 285  Automotive Internship  5
Semester Prerequisite: Director/Approval
Students are able to earn credits while employed as a technician in auto mechanics, auto body, or diesel heavy equipment repair. A pre-enrollment interview between the student and department director is required. The director must approve the training station and working conditions. (F, Sp)

AVAF 125  Aircraft Systems I  2
Semester Prerequisite: Program Approval
The study of fuel management, transfer, fueling, and fuel pump systems. This course covers the procedures used to inspect, check, service, trouble-shoot, and repair aircraft fuel systems and fuel system components. Course material emphasizes fluid quantity indicating, fluid pressure, and warning systems. (Sp)

AVAF 126  Aircraft Systems II  5
Semester Prerequisite: Program Approval
The study, analysis, and repair of aircraft landing gear and brake systems and their related warning systems. Includes the study, inspection, servicing, and repair of aircraft hydraulic and pneumatic systems and their related components. (Sp)

AVAF 127  Aircraft Systems III  3
Semester Prerequisite: Program Approval
Covers the inspection, checking, trouble-shooting, servicing, and repair of aircraft heating, cooling, air conditioning, pressurization, oxygen, ice and rain control, and fire protection systems. (Su)

AVAF 134  Aircraft Instruments  2
Semester Prerequisite: Program Approval
Course covers inspection, checking, servicing, trouble-shooting, repair of electronic flight instrument systems, both mechanical and electrical speed, altitude, temperature, pressure, and flow instrument systems. Special removal and installation techniques applicable to aircraft instruments is included. (Su)

AVAF 208  Aircraft Structures I  4
Semester Prerequisite: Program Approval
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course introduces the procedures for identification, inspection, testing, and repairing of wood, fabric-covered, and sheet metal aircraft. This course also covers the installation and removal of conventional rivets, the forming of aircraft sheet metal, the installation of special rivets and fasteners, and an introduction to applying finishing materials. (Sp)
AVAF 299 Aircraft Structures II 4
Semester Prerequisite: Program 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. Also includes aircraft inspection procedures to ensure conformity with flight safety standards. (F)

AVAF 213 Aircraft Structures III 3
Semester Prerequisite: Program Approval
An advanced course covering the inspection, repair, lay out, bending and assembly of aircraft sheet metal. Inspection, testing, and repair of fiberglass, plastics, honeycomb, and composite laminated structures is practiced. Installation and removal of special fasteners for bonded and composite structures and servicing of aircraft windows, doors, and interior furnishings is included. (F: Sp)

AVAF 211 Aircraft Electrical I 4
Semester Prerequisite: Program Approval
The intermediate aviation electrical course concentrating on the theory, 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. Also covers the installation, checking, and servicing of airplane and engine wiring, controls, switches, indicators and protective devices. (Sp: Su)

AVAF 212 Aircraft Electrical II 4
Semester Prerequisite: Program Approval
Studies the repair of airplane and engine electrical system components with emphasis on the inspection, checking, servicing, and repair of alternating and direct current systems. Also, general troubleshooting techniques are practiced with special emphasis on A.C. and D.C. electrical systems. (Su)

AVAF 246 National Airframe Certification Procedures 1
Semester Prerequisite: Program Approval
Study of the Federal Aviation Regulations pertaining to national certification as a licensed airframe mechanic. Includes testing in all required areas of study as prerequisite to receiving authorization to take the general and airframe national certification test administered by representatives of the Federal Aviation Administration. (F)

AVAF 252 Helicopter Maintenance I 3
Semester Prerequisite: Program Approval
Advanced studies in maintenance practices used in the construction, inspection, and repair of helicopters. (F: Sp: Su)

AVAF 254 Helicopter Maintenance II 3
Semester Prerequisite: Program Approval
Advanced studies in maintenance practices used in the construction, inspection, and repair of helicopters. (F: Sp: Su)

AVCE 131 VFR Pilot Refresher Seminar 5
Semester Prerequisite: Private Pilot License
This seminar is designed to update the knowledge of instrument-rated pilots. The focus of the course is on significant changes in Federal Aviation Regulations, Air Traffic Control Procedures, and pilot weather briefings. (Sp)

AVCE 132 IFR Pilot Refresher Seminar 5
Semester Prerequisite: Instrument Filing
This seminar is designed to update the knowledge of instrument-rated pilots. The focus of the course is on reviewing enroute and approach procedures, recent significant changes in Federal Aviation Regulations and Air Traffic Control Procedures, and pilot weather briefings. (F)

AVEL 130 Avionics Installations 3
Semester Prerequisite: Program Approval
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 wiring aircraft wiring diagrams, reading, standard procedures, and weight and balance calculation. (F)

AVEL 150 Avionics Test Generation 3
Semester Prerequisite: Program Approval
Covers the operational characteristics and proper operation of basic and specialized test equipment found in the avionics industry. Equipment covered includes multimeters, oscilloscopes, power supplies, multifunction ramps and bench test generators, wattmeters, time domain reflectometers, and spectrum analyzers. (Sp)

AVEL 151 Avionics Test Generation Lab 2
Semester Prerequisite: Program Approval
Test equipment and theory discussed in AVEL 150 will be put to practical use in the laboratory. Students build and calibrate own ROM. Common electronic and specialized avionics test equipment is used in the lab. (Sp)

AVEL 190 Receiver Troubleshooting 2
Semester Prerequisite: Program Approval
Familiarization with basic superheterodyne receiver principles and operation using black diagrams and component level theory. Various troubleshooting techniques are discussed. (Su)

AVEL 191 Receiver Troubleshooting Lab 2
Semester Prerequisite: Program Approval
Familiarization with basic superheterodyne receiver principles and operation. Various troubleshooting techniques will be put to practical use in the laboratory. Students construct, align, and troubleshoot an AM or superheterodyne receiver. (Su)

AVEL 260 Flight Line Testing 2
Semester Prerequisite: Program 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, ADF, radio, and others. (F: Su)

AVEL 261 Flight Line Testing Lab 2
Semester Prerequisite: Program Approval
A practical study of the electronic systems found aboard modern aircraft focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADF, radio, and others. (Su)

AVEL 220 Avionics Systems I 3
Semester Prerequisite: Program Approval
A study of the communications, navigation, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer specifications. Students will have the opportunity to obtain factory certifications for the repair of various systems. (F)

AVEL 221 Avionics Systems I Lab 4
Semester Prerequisite: Program Approval
A hands-on study of the communications, navigation, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer specifications. (F)

AVEL 224 Avionics Regulation 3
Semester Prerequisite: Program Approval
This course covers various Federal Aviation Administration rules and regulations as they pertain to avionics shop operation. Federal Communication Commission regulations are discussed to prepare the student to successfully complete the General Radiofrequency Operator Examination. (F: Sp)

AVEL 230 Avionics Systems II 3
Semester Prerequisite: Program Approval
A study of navigation, microwave pulse equipment, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer specifications. Students will have the opportunity to obtain factory certification for the repair of various systems. (Sp)

AVEL 231 Avionics Systems II Lab 4
Semester Prerequisite: Program Approval
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 295 International Avionics Systems 2
Semester Prerequisite: Program Approval
Familiarization with safety practices near large aircraft. Review of instrument systems and discussion on how these systems are designed in civil aviation. Discussion of navigation, communication, and pulse systems as used in transport category aircraft. Discussion of the differences and similarities between FAA regulations and those of other countries. (Su)

AVEL 297 Avionics Internship 2
Semester Prerequisite: Program Approval
Minimum 128 hours per semester as an aviation electronics intern. Independent study. Part-time occupational internship in avionics technology. The internships will be at certified repair stations as established by the internship coordinator. (Su)
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AVEL 299 Advanced Avionics Laboratory 2
Semester Prerequisite: Program Approval
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. (Sp)

AVFT 201 Flight Training I 7.5
Semester Prerequisite: Program Approval
Basic Skills Prerequisite: Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)
Provides in-flight and ground training in the single-engine, non-complex aircraft culminating in aeronautical knowledge, experience and skill in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp)

AVFT 202 Flight Training II 5
Semester Prerequisite: Program Approval
Provides in-flight and ground training in single-engine, non-complex airplane developing students’ instrument, night, and cross-country flying skills. (F, Sp, Su)

AVFT 203 Flight Training III 5.5
Semester Prerequisite: Program Approval
Provides instruction in complex, single-engine airplane developing students’ skill at IFR navigation and ATC procedures in en route and terminal environment. (F, Sp, Su)

AVFT 204 Flight Training IV 5
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in complex airplane developing students’ skill in IFR navigation and ATC procedures. Student will develop skills at performing commercial proficiency flight maneuvers. At completion of course, student will take practical test for commercial/instrument pilot airplane. (F, Sp, Su)

AVFT 205 CFII Flight Training 3.5
Semester Prerequisite: Program Approval
Provides in-flight and ground training in common primary training and complex airplanes. Student will develop instructional skills necessary to train pilots to certification in accordance with Federal Aviation Regulations. Student will take practical test for Certified Flight Instructor Airplane upon completion. (F, Sp, Su)

AVFT 206 Flight Instructor Instrument Flight Training 2.5
Semester Prerequisite: Program Approval
Provides in-flight and ground training in non-complex aircraft. Student will develop instructional skills necessary to train pilots for the instrument rating. Student will take practical test for the instrument flight instructor rating airplane upon completion. (F, Sp, Su)

AVFT 207 Multi-Engine Flight Training 1.5
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in multi-engine airplane. Student will take multi-engine practical test upon completion. (F, Sp, Su)

AVFT 208 Multi-Engine Instructor Flight Training 0.75
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in multi-engine airplane. Student will develop instructional skills necessary to train students for multi-engine practical test. Student will take multi-engine instructor practical test upon completion of course. (F, Sp, Su)

AVFT 209 Airline Transport Pilot Flight Training 1.25
Semester Prerequisite: Program Approval
Provides in-flight and ground training in multi-engine aircraft. At completion of course, student will take Airline Transport Pilot practical test. (F, Sp, Su)

AVFT 290 Turbine Aircraft 2
Semester Prerequisite: Program Approval
Provides in-flight and ground training in turbine-powered, multi-engine aircraft culminating in aeronautical knowledge, experience, and maneuvering skills commensurate with that required of the entry-level first officer position for commercial turboprop aircraft. (F, Sp, Su)

AVGM 111 Aviation General I 4
Semester Prerequisite: Program Approval
This course is designed to develop the skills and knowledge required to weigh an aircraft and record the appropriate data. It involves mathematical and basic physics principles related to aviation, including aerodynamics, theory of flight, aircraft structural design and simple machines. (F, Sp)

AVGM 112 Aviation General II 6
Semester Prerequisite: Program Approval
Introduces the Federal Aviation Regulations involving the mechanic’s privileges and limitations and related aviation operations. Includes the selection and use of aviation publications, maintenance forms, records, reports, aircraft drawings, graphs and charts, symbols, blueprints, and system schematics. Also focuses on aircraft ground operations and servicing of related aircraft systems. (F, Sp)

AVGM 113 Aviation General III 4
Semester Prerequisite: Program Approval
This initial aviation electrical course offering instruction in basic electrical theory and its aviation application. Topics include: the calculation and measurement of voltage, current, resistance, continuity, and power; the theory, inspection and servicing of aircraft lead-acid and Ni-Cad batteries; and the construction of a volt-ohm meter. (F, Sp)

AVGM 114 Material and Processes 5
Semester Prerequisite: Program Approval
This course covers identification and selection of the appropriate aviation hardware, hand tools, cleaning materials, fluid lines, and non-destructive testing methods. Included is performance of non-destructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, and installation and testing of fixed lines. (F, Sp)

AVGS 101 Private Pilot Ground School 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 4; Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)
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
Semester Prerequisite: AVGS 101/Private Pilot License
This course focuses on the application of meteorological theory to the practical aspects of flight planning. The student will understand basic concepts of weather theory, obtain weather briefings by using a personal computer; interpret weather charts, forecasts and reports, both domestic and international. (ICAO), make appropriate "go/no go" decisions. (Sp)

AVGS 141 Fundamentals of Air Traffic Control 4
Semester Prerequisite: Program Approval
This course will cover the history of ATC procedures and regulations; field experience at local ATC facilities as well as working with "UNICOM," analysis and prevention of traffic conflicts and an introduction to international ATC procedures, e.g., Eurocontrol. (F)

AVGS 211 Instrument Pilot Ground School 4
Semester Prerequisite: AVGS 101/Private Pilot License
This course prepares the student for the successful completion of the FAA instrument rating written examination. The student will learn operation and interpretation of the flight instruments, the use of enroute, approach, SIDs, and STAR charts; ice navigation, air traffic control procedures, and meteorology as it applies to the instrument pilot. (F, Sp, Su)

AVGS 221 Commercial Pilot Ground School 4
Semester Prerequisite: AVGS 101/Private Pilot License
This course prepares the student for the successful completion of the FAA commercial pilot written examination. The student will develop knowledge of aerodynamics, high performance aircraft systems, aircraft performance; Federal Aviation Regulations, navigation and flight planning, and meteorology as it applies to commercial pilots. (F)

AVGS 222 Flight Instructor Ground School 4
Semester Prerequisite: Program Approval
This course will prepare the student for the successful completion of the FAA Fundamentals of Instructing and the Flight Instructor-Airplane and Advanced Ground Instructor written exams. The student will develop a flight training syllabus with lesson plans for use in training pilots. (Sp)
AVPP 195 Preventive Maintenance 2
Semester Prerequisite: None
This course covers the inspection, servicing, troubleshooting, and repair of reciprocating engine systems and components. This course also includes the inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 241 Reciprocating Engine Systems 5
Semester Prerequisite: Program Approval
This course covers the inspection, servicing, troubleshooting, and repair of reciprocating engine cooling and lubrication systems. In addition, the interaction of the systems is studied, and repair and troubleshooting of reciprocating engine systems and components is conducted using FAA and maintenance publication procedures. (F, Sp, Su)

AVPP 253 Reciprocating Ignition Systems 4
Semester Prerequisite: Program Approval
This course covers the operation, analysis, inspection, servicing, troubleshooting, and repair of reciprocating engine ignition systems and components. This course also includes inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 255 Reciprocating Induction Systems 2
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine fuel systems and components. This course also includes inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 257 Aircraft Propeller Systems 4
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 259 Gas Turbine Engine I 4
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 261 Gas Turbine Engine II 4
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 263 Gas Turbine Systems 2
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 265 Powerplant Instruments 2
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVPP 267 National Powerplant Certification Procedures 1
Semester Prerequisite: Program Approval
This course covers the analysis of reciprocating engine fuel systems and components, including inspection, servicing, troubleshooting, and repair of reciprocating engine lubrication systems. (F, Sp, Su)

AVST 211 Flight Simulator I 1
Semester Prerequisite: AVGS 101 and Concurrently
Provides flight simulator and ground training to develop students' skills in flight navigation and ATC procedures. Course is intended to be taken concurrently with AVFT 201. (F, Sp, Su)

AVST 212 Flight Simulator II 1
Semester Prerequisite: AVGS 101 and AVST 211
Provides flight simulator and ground training to develop students' skills in flight navigation and ATC procedures. Course is intended to be taken concurrently with AVFT 201. (F, Sp, Su)

AVST 213 Flight Simulator III 1
Semester Prerequisite: AVGS 211 and AVST 212
Provides flight simulator and ground training to develop students' skills in flight navigation and ATC procedures. Course is intended to be taken concurrently with AVFT 201. (F, Sp, Su)

AVST 214 Flight Simulator IV 1
Semester Prerequisite: AVGS 211 and AVST 213
Provides flight simulator and ground training to develop students' skills in flight navigation and ATC procedures. Course is intended to be taken concurrently with AVFT 201. (F, Sp, Su)

AVST 215 Multi-Engine Flight Simulator 1
Semester Prerequisite: AVST 214
Provides flight simulator and ground training to develop students' skills in flight navigation and ATC procedures. Course is intended to be taken concurrently with AVFT 201. (F, Sp, Su)

BDCS 201 Starting a Business 1
Semester Prerequisite: None
Entrepreneurs are usually required to wear many "hats" and may have no idea what skills and processes are involved in starting and operating a business. This course is designed to help you learn the basics of starting and operating a business. (F, Sp, Su)

BDCS 202 Pitfalls to Avoid When Opening or Operating a Business 1
Semester Prerequisite: None
This seminar is presented by a successful business person to help you avoid the problems and costs of starting and operating a business. (F, Sp, Su)

BDCS 205 Systems for Record Keeping 1
Semester Prerequisite: None
This seminar is presented by a successful business person to help you keep track of your business. (F, Sp, Su)

BDCS 209 Financial Management for Small Business 1
Semester Prerequisite: None
This seminar is presented by a successful business person to help you manage your financial resources. (F, Sp, Su)

BDCS 210 Customer Relations 1
Semester Prerequisite: None
Anyone who sells, greets, or provides services to customers can discover new ways to create good customer relations. By communicating effectively, understanding customer personalities, and how to deal with them, and assessing their needs, participants can serve their customers in a positive manner. (F, Sp, Su)
BCS 211 Advertising for Small Business
Semester Prerequisite: None
This seminar will teach how to plan, create, select, and evaluate advertising. Entrepreneurs can learn to develop an advertising plan that is unique to the special needs of their organizations. (F: Sp: Su)

BCS 215 Developing a Marketing Plan
Semester Prerequisite: None
This seminar familiarizes participants with marketing and provides an opportunity to write a marketing plan. Participants will learn to use a six-step process that involves obtaining data, developing the plan, and analyzing the results. (F: Sp: Su)

BCS 225 Writing A Business Plan
Semester Prerequisite: None
Participants can expect to become familiar with business planning and how to develop and maintain a business plan. Most creditors require a business plan before reviewing a loan application. Be prepared. Write your business plan with the information provided at this seminar. (F: Sp: Su)

BCS 230 Small Business Taxes
Semester Prerequisite: None
Federal, state, and local governments assess a variety of taxes on business. This seminar will identify the various taxes which pertain to small businesses in Michigan and provide information on the tax returns used and filing responsibilities of the business. (F: Sp: Su)

BIOL 121 Biology
Semester Prerequisite: Chemistry Recommended
Basic Skills Prerequisite: Reading Level 4, Writing Level 4
Topics include cell biology, biological molecules, metabolism, cell structure and function, passage of materials across membranes, harvesting energy, mitosis, meiosis, introductory genetics, and the relationship between DNA, RNA, and protein synthesis. (F: Sp: Su)

BIOL 127 Cell Biology
Semester Prerequisite: CHEM 120/125/125H, High School Chemistry
Basic Skills Prerequisite: Math Level (See Class Schedule)
One of two biology courses for science majors. Lecture topics include chemistry of carbohydrates, lipids and proteins, structure and function of prokaryotic and eukaryotic cells, biochemistry of nutrition and photosynthesis, genetics, and the regulation of gene expression. Laboratory stresses techniques of cell and molecular biology as well as genetics. (F: Sp)

BIOL 128 Organismic Biology
Semester Prerequisite: None
This course examines adaptations of organisms to changing environments. Major emphasis is on physiological adaptations, natural selection, evolution, and ecology. Aquatic ecosystems are examined in the laboratory, sampling techniques and statistical methods are used to analyze a local river. (Sp: Su)

BIOL 210 Natural Resource Conservation
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
This course examines the renewable natural resources and the policies which govern their use in the United States. Laboratory investigations include measurement techniques, land use evaluations, and environmental problem solving. These exercises will be oriented toward the completion of an environmental impact assessment covering a current local environmental situation. (F)

BIOL 260 Botany
Semester Prerequisite: 1 Semester of Biology Recommended
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. (Sp)

BIOL 265 Zoology
Semester Prerequisite: None
Beginnings with an introduction to Protozoa, population genetics, the theory of evolution and ecology. Deals principally with the taxonomy and comparative anatomy of members found within the major animal phyla. Phylogenetic approach is used to study the various animal phyla from Protozoa through Chordata. (Sp)

BIOL 279 Human Genetics
Semester Prerequisite: BIOL 121/Equivalent
Basic Skills Prerequisite: Math Level (See Class Schedule)
This course introduces human genetics. Topics include Mendelian genetics, multifactorial traits, cancer, biochemical genetics, prenatal diagnosis, and genetic counseling. (F)

BIOL 275 Molecular Biology I
Semester Prerequisite: BIOL 121/Departmental Approval
Introduces principles of molecular biology, DNA/RNA structure and function, gene regulation, and recombinant DNA technology. Laboratory emphasizes reagent preparation, culturing bacteria, isolating and purifying both bacterial and plasmid DNA, restriction enzyme digestion of DNA, and agarose gel electrophoresis of DNA. (F)

BIOL 276 Molecular Biology II
Semester Prerequisite: BIOL 275, Minimum in BIOL 275
This course continues the study of molecular genetics. (F)

BLDR 101 Basic Woodworking
Semester Prerequisite: None
The students learn about wood characteristics, hard 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 106 Furniture Making
Semester Prerequisite: BLDR 161
Design and construction of simple furniture, with emphasis on selection of materials, options in joint and fastening methods, construction techniques, assembly procedures and problem solving. (F: Sp)

BLDR 167 Wood Joinery, Joint Strength and Methods
Semester Prerequisite: None
In this course the students will receive instruction in various techniques for making wood joints. The strength and application of the various joints will be discussed. (F: Sp)

BLDR 105 Build Your Own Cabinets
Semester Prerequisite: BLDR 101
This course offers hands-on experience in building vanities, base cabinets, and wall cabinets. It also covers urea of tools and machines, cabinet construction, drawer construction, door style options, and job site work. Students supply their own lumber. (F: Sp: Su)

BLDR 110 Wood Projects
Semester Prerequisite: BLDR 101/Equivalent
This course 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 instruction demonstrates uses of tools/equipment and consults with students on their individual projects. (F: Sp)

BLDR 111 Wood Staining and Finishing
Semester Prerequisite: None
This course is designed to give the average craftsman a basic knowledge of wood finishing processes. The course will include wood fillers, staining, bleaching, sealing, varnishing, brushing, aging, and spray application. The course will include both lectures and hands on experience on the student's own projects. (F: Sp: Su)

BLDR 123 Basic Painting and Decorating
Semester Prerequisite: None
This course covers the step-by-step procedures of interior and exterior painting, including surface prep, materials, tools, estimation, patching, wood staining, and decorative stenciling techniques and procedures. (F: Sp)
BLDR 132 General Home Maintenance 2
Semester Prerequisite: None
This is an introductory course in general home maintenance. Areas covered include basic tools, electrical, plumbing, framing, roofing, interior trim, drywall and painting, appliance maintenance and repair, and concrete flatwork and stonework. (F, Sp, Su)

BLDR 144 Build Your Own Home 2
Semester Prerequisite: None
This course is designed for students who wish to build their own homes. Included are design considerations, land acquisition, selection of materials, choosing contractors, scheduling of work, financing, and landscaping. Guest speakers, who are experts in their various fields, provide the instruction. (F, Sp, Su)

BLDT 100 Introduction to Construction 3
Semester Prerequisite: None
This course covers basic concepts of construction, including civil and regional planning, managing, contracting, designing, estimating, building, and inspecting, as well as the production work normally associated with construction. (F)

BLDT 103 Structural Blueprint Reading 4
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)
This course covers symbols, conventions and abbreviations used in structural blueprints. The students will be able to recognize conventions and verbally describe their interpretation in trade or lay terms, according to standard architectural practices. Residential and commercial prints are used to show the relationship between working drawings and specifications. (F, Sp, Su)

BLDT 121 Residential Framing and Foundations 4
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)
Students will learn to frame residential buildings using accepted framing techniques, such as framing, member spacing, framing floor systems, interior and exterior walls, ceilings, roofs and stairs. This course covers the various types of foundations and the advantages and disadvantages of each. Hands-on methods are used. (F, Sp)

BLDT 124 Remodeling, Sheathing, and Siding 4
Semester Prerequisite: BLDT 121
Students will learn to remodel, sheathing, and side a residential building. This course covers the analysis, designing, estimating, problem solving, building practices, materials, and installation methods for remodeling, rooing, and exterior wall covering projects. (Sp)

BLDT 126 Interior Carpentry 4
Semester Prerequisite: BLDT 121
Students will learn to finish the interior of a residential building. This course covers the materials, installation practices, and material takeoff to do the finish carpentry for a house to include windows, doors, base, chair rail, wood floors, doors, simple built-ins, and cabinets. (F)

BLDT 127 Framing Square and Stair Layout 2
Semester Prerequisite: None
This course covers the proper use of the framing square. Students will lay out common, hip, valley, and jacks. The course will also include gable and stud, box, bridge, and stair stringers. Instruction will emphasize understanding of math and decimal conversions involved in using the square. (F, Sp, Su)

BLDT 262 Builders Business License 4
Semester Prerequisite: None
This course covers the principles of residential builder organizations and business practices. Along with other useful information, to help students pass the State of Michigan Builder's License Exam. Preparation for a residential project from planning to actual construction and sale of the project is covered. (Sp)

BLDT 277 Construction Cost Estimating 4
Semester Prerequisite: BLDT 103
Students will learn to do a structural material takeoff and a complete estimate for residential and light commercial buildings. This course uses standard estimating practices to estimate the cost of buildings, based on detailed blueprints. (F, Sp)

BLDT 281 BOCA/Uniform Code 3
Semester Prerequisite: None
Students will be introduced to the two most commonly used building codes in the United States. This course will emphasize the use, interpretation, and application of the Uniform and BOCA Building Codes. Requirement for materials, labor, design, and fire standards for residential and commercial construction will be emphasized. (F, Sp)

BLDT 296 Ceramic Tile Seminar 5
Semester Prerequisite: None
This seminar will teach the basic principles for installation of ceramic tile. This includes the selection of types of tile, how to lay out the tile, preparation of the surface, and repair of broken tiles. (F, Sp)

BLDT 298 Builders License Review 1
Semester Prerequisite: None
This is a two-day workshop designed to prepare individuals for the State of Michigan Residential Building Examination. The workshop will include concentrated instruction in blueprint reading, state regulations, building codes, basic math, and construction codes. (F, Sp, Su)

BUSN 118 Introduction to Business 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level I, Writing Level I
Introduces students to principles, problems, and practices related to the world of business. Topics covered include business management and organization, marketing, finance, economics, production, and international business. (F, Sp, Su)

BUSN 191 Independent Study in Management 1
Semester Prerequisite: Departmental 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 12 hours work required, plus completion of written project report. (F, Sp, Su)

BUSN 192 Independent Study in Management 2
Semester Prerequisite: Departmental 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 25 hours work required, plus completion of written project report. (F, Sp, Su)

BUSN 193 Independent Study in Management 3
Semester Prerequisite: Departmental 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 48 hours work required, plus completion of written project report. (F, Sp, Su)

BUSN 201 International Business 3
Semester Prerequisite: BUSN 118 Equivalent
Overview of international business organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import quotas, and export controls, balance of payments, and free trade versus protectionism. (F, Sp, Su)

BUSN 229 Public Relations 2
Semester Prerequisite: None
Provides an introduction to principles involved in creating and maintaining good public relations. Techniques for developing improved employee-employee relations, customer relations, and the total public relations effort will be discussed and applied. (F, Sp)

BUSN 250 Personal Finance 2
Semester Prerequisite: None
Provides a broad survey of topics including budgeting, savings, shopping, buying a car, renting, buying or selling a home, credit, insurance, and estate planning. Not intended to be a financial planning course, but students will develop an understanding of financial concerns. (F, Sp)

BUSN 251 Stock Market Essentials 3
Semester Prerequisite: None
Study of securities market 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)
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BUSN 252 Personal Financial Planning
Semester Prerequisite: None
This course provides students with practical information to guide personal financial decisions. It is designed to facilitate learning the process of financial planning to help students make informed choices about financial matters. (Sp)

BUSN 254 Introduction to Investments
Semester Prerequisite: None
This course covers the fundamental principles of investing and its role in our economy. Emphasis will be on developing terminology, types of investments, and personal financial planning such as mutual funds, real estate, CDs, money market funds, limited partnerships, insurance, IRAs stock, and tax shelters. This is an overview course. (F, Sp)

BUSN 255 Advanced Investments
Semester Prerequisite: BUSN 254
Students will use their knowledge of investment options to develop and implement a personal investment strategy. Investment objectives and influencing factors will be examined. (Sp)

BUSN 270 Updating Employee Policies - A Legal Perspective
Semester Prerequisite: None
This seminar provides a comprehensive review of recent developments in employment laws and court decisions which impact employer policies and employees. Topics will include employment at will and just-cause standards, EEO/AA policies, handicap accommodations, wage and hour rules, work rules, and benefits. (F, Sp, Su)

BUSN 295 Small Business Management
Semester Prerequisite: None
Small business operations, including business and managerial functions, principles of management, environment of small business, financial, marketing, production management, legal and governmental relationships. Development of a small business plan is required. (F, Sp)

CABS 108 Seminar, Special Subjects
Semester Prerequisite: None
This series of seminars provides the successful participant with operational proficiency in using specific microcomputer software. The seminars also provide the student 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 Beginning Keyboarding on the Computer
Semester Prerequisite: None
This course is designed for students having no previous typing experience. Basic keyboarding skills using the touch method for the microcomputer operator are developed. Emphasis is on speed and accuracy using the alphabetic keyboard, the figure keys, symbol keys, and the number pad. Skill level of 39 wpm is developed. (F, Sp, Su)

CABS 102 Microcomputers for Non-Majors
Semester Prerequisite: None
Surveys concepts and uses of software applications: word processors, spread-sheets, 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
Semester Prerequisite: Previous Keyboarding
This course is designed to develop speed and accuracy at the keyboard and to individualize this development for each student. (F, Sp, Su)

CABS 105 Advanced Keyboarding on the Computer
Semester Prerequisite: CABS 101/CPDA 103 Equivalent
In addition to building speed and accuracy on the computer, this course emphasizes formatting for personal letters and envelopes, basic business letters and envelopes, memos and drafts, reports, business forms, administrative and employment communications. Introductory word processing functions are introduced. (F, Sp, Su)

CABS 110 Microcomputer Office
Semester Prerequisite: CABS 105/CPDA 106 Equivalent
This course provides an introduction to a microcomputer at the level of an office computer. It is designed to develop basic operational proficiency while using MS Office (MS Word, MS Excel, MS Access, and MS PowerPoint). Students learn how to use word processing, spreadsheets, database, and presentation software. Topics include creating letter, memo, simple spreadsheets, database structures, and desktop presentations. (F, Sp, Su)

CABS 111 Beginning WordPerfect for the Office
Semester Prerequisite: CABS 105/CPDA 106 Equivalent
This course is designed to develop basic word processing skills using the IBM microcomputer using WordPerfect software for the rapid production, revision, and retrieval of routine business documents, such as letters, envelopes, memorandums, tables, reports, short manuscripts, and repetitive correspondence. (F, Sp, Su)

CABS 112 Advanced WordPerfect for the Office
Semester Prerequisite: 2.0 Minimum in CABS 111/CPDA 205 Equivalent
This course is designed to expand on the word processing skills previously developed in CABS 111 including basic desktop publishing features. Additional applications include the following: fonts, line draw, graphics, page, and parallel columns, outlines, headers and footers, footnotes and endnotes, macros, merges, sorting and selecting, styles, and tables of contents, indexes, and lists. (F, Sp, Su)

CABS 113 Microsoft Word for the Office
Semester Prerequisite: CABS 105/CPDA 106 Equivalent
This course is designed to develop a basic word processing skill on the IBM microcomputer using Microsoft Word software for the rapid production, revision, and retrieval of routine business documents, such as letters, envelopes, memorandums, tables, reports, short manuscripts, and repetitive correspondence. (F, Sp, Su)

CABS 114 WordPerfect - Beginning for DOS
Semester Prerequisite: Keyboard Familiarity
Beginner-level instruction on use of WordPerfect. Topics include creating, editing, formatting, and storing word processing documents. Also learned are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and maintaining lists. Extensive hands-on activity. (F, Sp, Su)

CABS 115 WordPerfect - Advanced for DOS
Semester Prerequisite: CABS 114
Instruction in the use of WordPerfect features such as macros, tables, columns, footnotes and endnotes, graphics, and fonts. Includes techniques for improving the appearance of documents produced through use of appropriate fonts and other print capabilities. (F, Sp)

CABS 117 Microcomputer Forms Design
Semester Prerequisite: None
This course covers the development and composition of business forms using forms design software on a microcomputer. Additional topics include forms layout, margins, type sizes, guides of paper, construction, reproduction, specifications, and forms management. (F, Sp)

CABS 118 Advanced Word for the Office
Semester Prerequisite: 2.0 Minimum in CABS 113/Equivalent
This course is designed to expand on the word processing skills previously developed in CABS 113 including basic desktop publishing features. Additional applications include the following: macros, borders, pictures, draw, word art, tables, charts, text columns, styles, merge, sorting and selecting, outlines, fill-in forms, and tables and indexes. (F, Sp, Su)

CABS 119 Word for Windows
Semester Prerequisite: Windows, Keyboard Experience
This course is designed to provide the person new to the Word for Windows program with the ability to perform the most common word processing functions. The course also covers less frequently used features, such as creating mail merge and creating tables. (F, Sp)

CABS 121 WordPerfect for Windows
Semester Prerequisite: Windows, Keyboard Experience
Provides instruction in the use of WordPerfect for Windows. Topics include creating, editing, formatting, and storing word processing documents. Also learned are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and related skills. (F, Sp, Su)

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 122</td>
<td>Lotus 123 Self-Taught</td>
<td>None</td>
<td>An introduction to using the Lotus 1-2-3 spreadsheet, graphics, and database management program. The course uses a variety of teaching techniques such as video tapes and computer-assisted instruction. Provides hands-on experience in creating spreadsheets, producing graphs and reports, and searching and sorting databases. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 123</td>
<td>Lotus 123 for DOS</td>
<td>None</td>
<td>Provides the student with a working knowledge of Lotus 1-2-3 by providing experience in applying advanced features of the program to routine business problems. Topics include spreadsheet navigation, basic functions, spreadsheet formatting, formulas, special functions, freeze/copy, and an introduction to graphs, macros, and database. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 124</td>
<td>Lotus Release 2 for DOS</td>
<td>Semester Prerequisite: CABS 120/123</td>
<td>Expands the students' working knowledge of Lotus 1-2-3 by providing experience in applying advanced features of the program to routine business problems. Topics include an in-depth study of macros, database management, graphs and charts, data tables, user defined menus, and custom help screens. Uses release 2 of Lotus 1-2-3. (F, Sp)</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>Beginner-level training in the creating of spreadsheets and databases using Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. Also included is instruction in file handling, disk management, and macro creation and use. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 127</td>
<td>Quattro Pro</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>Beginner-level training for the Quattro Pro spreadsheet program that provides the student with skills needed to apply Quattro Pro to routine business problems. Topics include basic operating concepts; functions, macros, and graphing. (F, Sp)</td>
</tr>
<tr>
<td>CABS 128</td>
<td>Lotus 123 for Windows</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>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)</td>
</tr>
<tr>
<td>CABS 129</td>
<td>Excel - Advanced</td>
<td>Semester Prerequisite: CABS 126</td>
<td>Advanced-level training in the creating of spreadsheets and databases using the Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 130</td>
<td>dBASE for Non-Majors for DOS</td>
<td>Semester Prerequisite: None</td>
<td>This course is designed for the person who uses an existing dBASE program who needs to develop a simple database. Students learn how to create database structures, enter and edit data, manipulate the data, and prepare printed reports. The programming mode is not addressed in this course. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 132</td>
<td>Paradox Database</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>This course is designed for the person who uses an existing Paradox database or who needs to develop a simple database application with Paradox. Students learn how to create database structures, enter and edit data, manipulate the data, and prepare printed reports. Students learn how to use the Paradox Personal Programmer. (Sp)</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>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)</td>
</tr>
<tr>
<td>CABS 134</td>
<td>FoxPro Database - for Windows</td>
<td>Semester Prerequisite: None</td>
<td>This course provides practical, hands-on experience using database management software. Activities allow the student to create, maintain, search and retrieve records, and create reports using the software FoxPro for Windows. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 135</td>
<td>FoxPro for Windows</td>
<td>Semester Prerequisite: None</td>
<td>This course is designed for the person who needs to develop a simple database. Students learn how to create database structures, enter and edit data, manipulate the data, and prepare printed reports. The programming mode is not addressed in this course. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 136</td>
<td>SQL: Structured Query Language</td>
<td>Semester Prerequisite: None</td>
<td>This course covers the relational database language SQL. Topics include table definition, queries, special operators, the join operation, views, security administration, and reports. A commercial SQL product is used to provide students with hands-on experience. (F, Sp)</td>
</tr>
<tr>
<td>CABS 140</td>
<td>Business Graphics Using Harvard Graphics</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>This course uses the microcomputer as a tool to create and present information in a graphic form. Students learn to determine the most appropriate type of chart or graph to communicate specific kinds of information. Harvard Graphics software is used to produce and present information. (F, Sp)</td>
</tr>
<tr>
<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>Semester Prerequisite: None</td>
<td>Graphics software is used to develop bar, pie, and line charts. Change features, such as type fonts, type size, shading, and other formats are included. Graphics are created from spreadsheet information. Instruction is given on the elements of a presentation. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 180</td>
<td>Desktop Publishing Using Pagemaker</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>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)</td>
</tr>
<tr>
<td>CABS 182</td>
<td>Microsoft PowerPoint/Windows</td>
<td>Semester Prerequisite: Windows, Keyboard Experience</td>
<td>MS PowerPoint/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)</td>
</tr>
<tr>
<td>CABS 195</td>
<td>MicroSoft Windows</td>
<td>Semester Prerequisite: None</td>
<td>This course is for a novice in the use of the Microsoft Windows environment. Topics include the use of Windows features (icons, dialog boxes, etc.) functions (program manager, file manager, print manager, control panel), and applications included with Windows (Write, Paintbrush, Accessories, Recorder, Terminal) (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 219</td>
<td>Advanced MicroSoft Word</td>
<td>Semester Prerequisite: CABS 119</td>
<td>Advanced-level training in word processing using the Microsoft Word program. The course introduces the user to the creation of professional documents. (F, Sp, Su)</td>
</tr>
<tr>
<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
<td>Semester Prerequisite: Departmental Approval</td>
<td>This course is designed as an office simulation that incorporates all the automated office skills learned. Students should demonstrate their ability to use software, create and modify documents, and perform tasks such as sorting, filtering, and Advanced desktop publishing techniques. (Sp)</td>
</tr>
<tr>
<td>CABS 233</td>
<td>Advanced MicroSoft Access</td>
<td>Semester Prerequisite: CABS 133</td>
<td>Advanced-level training in the creation of database management using the Microsoft Access Program. The instruction includes the manipulation and generation of reports and tables. (F, Sp, Su)</td>
</tr>
<tr>
<td>CACR 100</td>
<td>Machine Shorthand Theory</td>
<td>Semester Prerequisite: Typing Speed 40 WPM, Admission to Program/Approval</td>
<td>This course is specifically designed for basic stenography shorthand. The student will learn to take a steno machine to develop notetaking accuracy from 95 to 100 percent and speeds up to and including 70 wpm for five minutes. (F, Sp)</td>
</tr>
</tbody>
</table>
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CACR 110  Machine Shorthand Speedbuilding I  
Semester Prerequisite: CACR 100  
This course is specifically designed for speedbuilding in machine shorthand at the rates of 80 to 100 wpm for five minutes at 97 to 99 percent accuracy in the areas of literary, and Q and A dictation. (F, Sp, Su)  

CACR 120  Machine Shorthand Speedbuilding II  
Semester Prerequisite: CACR 110  
This course is specifically designed for speedbuilding in machine shorthand at the rates of 110 to 120 wpm for five minutes at 97 to 100 percent accuracy in the areas of literary, and Q and A dictation. (F, Sp, Su)  

CACR 130  WordPerfect for Court Reporters  
Semester Prerequisite: CACR Student/Reporter  
This lecture and practical application course consists of the study and application of the use of WordPerfect for transcription purposes in the Court and Conference Reporting Program. (F, Sp)  

CACR 140  English for Court Reporters  
Semester Prerequisite: CACR Student/Reporter  
This lecture and practical application course consists of the study and application of the proper use of grammar, punctuation, and word usage to the transcription process for court reporting students. (F, Sp)  

CACR 201  Q and A I  
Semester Prerequisite: CACR 120  
This course includes Q and A testimony dictation and machine shorthand speedbuilding and testing from 130 to 170 wpm at 97 to 100 percent accuracy; as well as four-voice testimony. (F, Sp, Su)  

CACR 202  Q and A II  
Semester Prerequisite: CACR 201  
This course includes Q and A testimony dictation and machine shorthand speedbuilding and testing from 170 to 200 wpm at 97 to 100 percent accuracy; as well as four-voice testimony. (F, Sp, Su)  

CACR 203  Q and A III  
Semester Prerequisite: CACR 202  
This course includes Q and A testimony dictation and machine shorthand speedbuilding and testing from 200 to 230 wpm at 97 to 100 percent accuracy; as well as four-voice testimony. (F, Sp, Su)  

CACR 210  Jury Charge I  
Semester Prerequisite: CACR 120  
This course includes jury charge dictation and machine shorthand speedbuilding and testing from 110 to 150 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 211  Jury Charge II  
Semester Prerequisite: CACR 210  
This course includes jury charge dictation and machine shorthand speedbuilding and testing from 150 to 180 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 212  Jury Charge III  
Semester Prerequisite: CACR 211  
This course includes jury charge dictation and machine shorthand speedbuilding and testing from 180 to 200 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 220  Literary I  
Semester Prerequisite: CACR 120  
This course includes literary dictation and machine shorthand speedbuilding and testing from 100 to 130 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 221  Literary II  
Semester Prerequisite: CACR 220  
This course includes literary dictation and machine shorthand speedbuilding and testing from 130 to 160 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 222  Literary III  
Semester Prerequisite: CACR 221  
This course includes literary dictation and machine shorthand speedbuilding and testing from 160 to 200 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 230  Medical/Technical Testimony I  
Semester Prerequisite: CACR 120  
This course includes medical and technical dictation and machine shorthand speedbuilding and testing from 100 to 130 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 231  Medical/Technical Testimony II  
Semester Prerequisite: CACR 230  
This course includes medical and technical dictation and machine shorthand speedbuilding and testing from 130 to 160 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 232  Medical/Technical Testimony III  
Semester Prerequisite: CACR 231  
This course includes medical and technical dictation and machine shorthand speedbuilding and testing from 160 to 190 wpm at 97 to 100 percent accuracy. (F, Sp, Su)  

CACR 240  C.A.T.  
Semester Prerequisite: Instructor Approval  
This course is designed to give students a hands-on experience with computer-aided transcription for the court reporters. (F, Sp)  

CACR 250  Court Procedures and Fieldwork  
Semester Prerequisite: Instructor Approval  
Students placed in this field work will spend 200 hours with official reporters, deposition reporters, and hearings reporters writing, transcribing notes in proper form, and producing 200 pages of transcript in order to learn courtroom, conference, hearings, and deposition techniques, procedures, and transcription production. (F, Sp)  

CACR 260  CSR Preparation  
Semester Prerequisite: CACR Student/Reporter  
This training and practice class is designed to prepare the Court and Conference Reporting student for the Certified Shorthand Reporter Examination using goal setting projects, speedbuilding material, five-minute transcriptions (literary at 100 words per minute and 1 to 2 syllabic intensity), daily transcriptions at 200 words per minute, Q and A at 225 words per minute), and written knowledge test handouts. (F, Sp)  

CACR 270  Realtime Reporting  
Semester Prerequisite: CACR Student/Reporter  
This course consists of instruction in realtime reporting as related to people with disabilities through lectures, videotapes, and hands-on applications. (F, Sp)  

CHCE 100  Nurse Refresher  
Semester Prerequisite: Current Michigan License  
For the inactive RN or LPN who would like to re-enter active practice, includes theory and practice in nursing care, pharmacology, selected disease processes, and new concepts in delivery of health care. Clinical component is included. (F, Sp)  

CHCE 101  Suicide Seminar: Assessment and Prevention  
Semester Prerequisite: None  
This seminar covers demographics, attitudes, and theories regarding suicide. Assessment skills for identifying suicide potential, interventions for the prevention of suicide, videotapes, case studies, and group discussions are used to increase awareness regarding suicide, in addition to giving insight in recognition, assessment, and prevention of suicide. (F, Sp)  

CHCE 103  Psychiatric Technician Update  
Semester Prerequisite: CHCE 213/Equivalent  
A course to update current medical and health practices and to provide additional information for the practicing basic psychiatric technician. Course content will include those areas of information not covered by the core component of the course. (F, Sp)  

CHCE 106  Cardiac Dysrhythmia Interpretation  
Semester Prerequisite: Health Professional  
This course introduces the student to the identification of common dysrythmias seen on a monitor or telemetry unit. Content will include criteria, causes, hemodynamic effects, and treatment of dysrythmias according to ACLS guidelines. Use of monitoring equipment is integrated within the course content. (F, Sp)  

CHCE 107  Community Resources for Health Professionals  
Semester Prerequisite: None  
A course designed to help health care professionals identify and utilize community resources for their client population. Material will be presented through lecture by representatives of various local health care providers to clients and/or families. (F, Sp)
CHCE 112 Dental Auxiliary X Ray  
Semester Prerequisite: Dental Auxiliary with One Year Experience/Departmental Approval  
This course is designed for the dental auxiliary to update his or her skills and gain knowledge in making intra-oral radiographs of diagnostic quality. Includes theory and laboratory sessions in exposing, processing, mounting, and evaluation of radiographs. Upon successful completion the student receives a certificate of completion. (F, Sp, Su)  
1.5

CHCE 114 Physical Assessment Skills for Nursing Practice  
Semester Prerequisite: PHLT/PT/Nurse  
This course is designed for nurses in any area of practice. Emphasis is on techniques of physical examination: inspection, palpation, percussion, 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)  
2.5

CHCE 115 Physical Assessment Refresher  
Semester Prerequisite: CHCE 114/Equivalent  
This course is designed for students who have already had formal training in physical examination skills. Course content is designed to help students recall important signs of pathology and normal physical findings. There is also ample opportunity through supervised practice sessions, to improve specific techniques of physical examination. (F, Sp, Su)  
.75

CHCE 117 Physical Assessment Techniques for the Corrections Nurse  
Semester Prerequisite: Corrections Nurse/EMT  
This course is designed for nurses, and restricted to Nurses/EMTs currently employed by Michigan Department of Corrections. Physical exam skills are studied and extensively practiced with special attention to modifications required in the corrections setting. Live models are used. Common pathological findings are emphasized. All equipment supplied. (F, Sp, Su)  
2.75

CHCE 127 Physical Assessment for Community Mental Health Nurses  
Semester Prerequisite: Community Health Nurse for Developmentally Disabled Clients  
Course content is specific for nurses working with the developmentally disabled and emotionally disturbed client in the community health setting. Physical exam techniques are learned and then modified for the problem situations encountered in community health settings. Emphasis is on the detection of abnormal findings in major body systems. (F, Sp)  
1.5

CHCE 182 Acute Trauma/Emergency Nursing Seminar  
Semester Prerequisite: RN/LPN, EMT  
Nurses and pre-hospital personnel will increase their knowledge of acute trauma and medical emergencies. Lecture, demonstrations, and simulated emergency practice sessions are all used to assist students in assessing, prioritizing, and providing emergency care in a safe, organized manner. Chest, abdomen, burns, face, extremities, and neuro trauma are included. (F, Sp, Su)  
2

CHCE 185 Lab Tests for Nurses  
Semester Prerequisite: None  
A seminar for nurses and other health care personnel. Seminar content focuses on the systematic disease processes of specific lab tests, interpretation of test values, and application to practice. Mock lab reports and case study situations are used. (F, Sp)  
.5

CHCE 192 Pharmacology Math  
Semester Prerequisite: Allied Health Professional  
This course is designed for the registered nurse, licensed practical nurse, student of a nursing curriculum, pharmacy technician, and medical assistant. Its primary goal is to provide the student with a review of mathematics and a simplified method of calculating drug dosages in adult and pediatric patients. (F, Sp, Su)  
1

CHCE 194 Mental Health Nursing Seminar  
Semester Prerequisite: Registered Nurse  
This course is designed for registered nurses currently working with or who will work with clients with emotional problems. Students are taught the content for a mental status assessment, therapeutic communication techniques, psychotropic medications, patient teaching techniques, nursing interventions, and the evaluation of client progress. (F, Sp, Su)  
1.5

CHCE 195 Effective Interaction and Problem Solving Techniques  
Semester Prerequisite: RN/LPN/Allied Health  
This seminar stresses application of assertive communication skills. Personality and temperament styles are identified which determine conflict resolution, value clarification, and confrontation skills. Real and theoretical work situations are stressed to assist in effective problem-solving techniques. (F, Sp, Su)  
.5

CHCE 196 Geriatric Nursing Seminar  
Semester Prerequisite: Nurse (RN/LPN)  
This focused seminar is designed specifically for the nurse working in long-term care facilities. The student investigates aspects of nursing leadership and applies them to his or her own work environment. Issues of staff morale, staff turnover, realistic changes within economic and organization limitations are discussed. (F, Sp)  
.5
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CHCE 218
Licensure Exam Preparation for RN-NCLEX
and NLN Exams
Semester Prerequisite: Graduate Nurse, Diploma/ADN/BSN
This review course helps the graduate nurse organize and study important nurs-
ing care topics that are especially important, including pharmacology, medical-surgical nursing, child health, psychiatric nursing, and medical-surgical nursing. Students will take the national exam and receive feedback on their progress.

CHCE 222
Essentials of Emergency/Critical Care/Specialty Care Nursing
Semester Prerequisite: RN-PLAB/AEMT
This course emphasizes intensive education and training for nurses preparing to work in acute care specialty care settings. Topics include emergency management, critical care nursing, and management of trauma and critical interventional conditions. Emphasis is placed on developing practical skills needed to manage resources and set realistic goals.

CHCE 227
New Dimensions in Nursing
Semester Prerequisite: Nurse (FIN/P/L/N/NSN)
Seminar content is dependent upon course requirement.

CHCE 228
Nursing Management Strategies
Semester Prerequisite: Health Professional
This course provides an overview of the management function in health care set-
ing. Topics include the role of the nurse in management. Students will learn how to organize, lead, and control resources to achieve desired outcomes.

CHCE 228
Nursing Practice Update Seminar
Semester Prerequisite: RN/LPN/NGH/NSN
Seminar topics are selected from current medical literature and are designed to meet the needs of health care professionals. Topics include medication management, risk assessment, and patient education.

CHCE 230
Advanced Cardiac Life Support Training Seminar
Semester Prerequisite: Basic Cardiac Life Support Certification
The seminar is designed for members of the health care team to develop knowledge and skills in advanced cardiac life support (ACLS). Topics include advanced life support techniques, pharmacology, and assessment.

CHCE 234
Mental Health Update
Semester Prerequisite: Nurse
This seminar is designed to keep nurses updated on mental health care and its impact on quality of care.

CHCE 235
Advanced Cardiac Life Support (ACLS) Refresher Seminar
Semester Prerequisite: Basic Cardiac Life Support, Advanced Cardiac Life Support Certification
The seminar is designed to keep nurses updated on advanced life support techniques and pharmacology.

CHCE 239
Emergency/Trama/Update and Review
Semester Prerequisite: FIN/LPN Emergency Care Nurse
This seminar is designed for nurses working in the specialty field of emergency/trauma care. Topics include current status of emergency/trauma care and special techniques used in emergency/trauma care.

CHCE 240
Cardiac Rehabilitation Cognate for Nurse Assistants
Semester Prerequisite: CHCE 101
This seminar is designed for nurses working in the specialty field of cardiac rehabilitation. Topics include advanced life support techniques, pharmacology, and assessment.

CHCE 247
Techniques Update Course for RDNs
Semester Prerequisite: Dental/Dental Hygiene
This seminar is designed to update dental practitioners on the latest techniques and procedures in the field of dental hygiene.

CHCE 253
Dental Team Concepts
Semester Prerequisite: Dental Office Staff
This seminar is designed to update and motivate the dental team with current, practical information on "How to be a Successful Dental Office in the 90's." Topics include utilization of auxiliaries for maximum productivity, effective scheduling, and communication to break barriers.

CHCE 256
New Dimensions in Dental Hygiene
Semester Prerequisite: Dental Hygienist/Dental Professional Seminar content is dependent upon course requirement.

CHCE 258
Techniques Update Course for RDAs
Semester Prerequisite: Dental Assistant/Dental Hygienist
This seminar is designed for registered dental assistants who want to be updated on the latest techniques and procedures in the field of dental hygiene.

CHCE 265
Physical Assessment Skills for Geriatric Nursing
Semester Prerequisite: Nurse (FIN/LPN/NGH/NSN)
This seminar is designed for nurses who work with the elderly client in any setting. Topics include assessment of the elderly client and the use of assessment tools.

CHCE 266
Focal Problems and Patient Care Issues in Geriatric Nursing
Semester Prerequisite: Nurse (FIN/LPN/NGH/NSN)
This seminar is designed for nurses who work with the elderly client in any setting. Topics include assessment of the elderly client and the use of assessment tools.

CHCE 267
Therapeutic Communications
Semester Prerequisite: Health Professional
For health professionals with emphasis on the application of communication tech-
iques to practice in health care. Communication techniques are used as a tool to improve communication with patients and families.

CHCE 273
Registered Nurse Critical Care Core Curriculum
Semester Prerequisite: FIN with Medical Surgery Experience
This seminar is designed for nurses who work in critical care settings and are interested in improving their skills in critical care settings.

CHCE 282
Dental Auxiliary Seminar
Semester Prerequisite: Dental Auxiliary Seminar content is dependent upon course requirement.

CHCE 285
Dental Office Infection Control
Semester Prerequisite: Dental Personnel/Professional
This seminar is designed for dental professionals who work in dental clinics and are interested in improving their skills in infection control.

CHCE 286
Dental Specialty Focus
Semester Prerequisite: Dental Auxiliary/Professional
This seminar is designed for dental specialties and is intended to improve the skills of dental professionals who work in dental clinics and are interested in improving their skills in infection control.

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CHCE 299 Health Care Risk Management and Quality Review Workshop...

CHCE 290 Dental Hygiene Clinic Remediation 1
Semester Prerequisite: Dental Hygiene Program Director Approval
The students' clinical skills related to the practice of dental hygiene are evaluated for weaknesses and strengths. The student is then guided through the appropriate clinical study activities and evaluated periodically to eliminate the practical skill deficiencies identified. (F, Sp, Su)

CHCE 291 Dental Hygiene Didactic Remediation 1
Semester Prerequisite: Dental Hygiene Program Director Approval
The student's cognitive skills related to the practice of dental hygiene are evaluated for weaknesses and strengths. The student is then guided through the appropriate independent study activities and evaluated periodically to eliminate the knowledge deficiencies identified. (F, Sp, Su)

CHCE 292 Risk Management: Prevention and Reduction of Loss 3
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
Course provides an overview of the health care system and management functions necessary to control risk/promote quality, skills necessary to develop and maintain an effective loss prevention and risk financing program in a health care setting. Health care law, the medical malpractice arena, and claims management principles. (F)

CHCE 293 Quality Review: Performance Evaluation and Process Improvement 3
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This course covers history of quality assurance and the ways QA and GM have become integrated into the current health care system. The role of accreditation (JCAHO) and third party payer (MPPO) bodies in the physician practice and patient care. Quality peer review processes, data management, medical staff governance, credentialing, privileging quality/risk issues in high risk clinical areas. (Sp)

CHCE 294 Practicum: Health Care Risk Management and Quality Review 2.5
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
The student will select an approved topic and design an independent study/practicum related to risk management or quality review in their work setting. Each student may choose a CHCE 292, CHCE 293 faculty, or an agency staff person as a mentor. A written project report is required from each student. (Sp)

CHCE 295 Health Care Risk Management and Quality Review Special Issues 5
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This seminar will highlight a specially selected issue and examine how that issue impacts health care risk management and quality review. (Su)

CHCE 296 Health Care Risk Management and Quality Review Update 1
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This seminar will be held yearly for graduates of the Health Care Risk Management and Quality Review program to update their risk management skills and review new issues in loss prevention and quality review. (F)

CHCE 299 Advanced Cardiac Life Support (ACLS) Instructor Seminar 2
Semester Prerequisite: Basic Cardiac Life Support/Advanced Cardiac Life Support Certification
This course will train those health care professionals who are currently certified in Advanced Cardiac Life Support (ACLS), according to American Heart Association standards, as ACLS instructors. All participants are expected to recently their ACLS skills at the time of the course. Prior assigned readings are mandatory. (F, Sp, Su)

CHDV 101 Child Growth and Development: 0-5 years 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3, Writing Level 4
This course examines the growth and development of children (conception to five years) in physical, social, emotional, cognitive, and language development. Additional topics include nutrition, health, play, families, and the preschool experience. Students acquire skills in observing, recording, and interpreting child behavior. CDA, developmental context, functional area: healthy. (F, Sp, Su)

CHDV 111 Positive Guidance and Communication Skills With Children 4
Semester Prerequisite: None
This course, which includes held work, examines interaction skills and environmental structure that facilitate social and emotional growth in children. Topics include: positive guidance and discipline, effective communications with children; problem solving; social skill development; group management; aggression prevention; CDA functional areas: learning environment, self, social, guidance, communication, professionalism. (F, Sp)

CHDV 112 Building Relationships with Families in Child Care 2
Semester Prerequisite: CHDV 111 Recommended
This course examines ways to establish and maintain positive and productive 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, communicating with parents. CDA functional area: family. (Sp, Su)

CHDV 113 Health and Safety Issues in Child Care 1
Semester Prerequisite: None
This course examines health and safety issues in child care homes and centers. Topics include: understanding and preventing communicable illnesses; blood-borne pathogens; safe equipment and play areas; preventing accidents; nutrition, and health and safety education. The course addresses the CDA competencies of safe, healthy learning environment. (F)

CHDV 120 Child Care Curriculum: Physical Development 1
Semester Prerequisite: None
This course examines curriculum and activities which enhance the development of physical and motor skills of children in early childhood programs. Specific information is included on developmentally appropriate activities for fine and gross motor, and sensory development for a variety of ages. CDA functional areas: physical. Uses seminar format. (Sp)

CHDV 121 Child Care Curriculum: Cognitive and Language Development 1
Semester Prerequisite: None
This course examines curriculum and activities which enhance cognitive and language development of children in early childhood programs. It focuses on designating developmentally appropriate activities which foster curiosity and exploration. Topics include math, science, language arts, and emergent literacy. CDA functional areas: cognitive and communication. Uses seminar format. (Su)

CHDV 122 Child Care Curriculum: Creative Development 1
Semester Prerequisite: None
This course examines curriculum and activities which enhance the creative development of children in early childhood programs. Specific information on developmentally appropriate and open-ended activities in the areas of art, music, creative, and dramatic play with a variety of materials are shared. CDA functional area: creative. Uses seminar format. (F)

CHDV 130 Introduction to Child Care 1
Semester Prerequisite: None
This course introduces factors in providing quality day care. Topics include: program planning and curriculum development; child growth and development; positive guidance and discipline skills; safety, health and nutrition; parent communication and involvement; and professionalism. CDA functional area: learning environment, program management, and professionalism. (F)

CHDV 131 Family Day Care Management 2
Semester Prerequisite: None
This course presents a systematic approach to managing a family child care home and creating a positive learning environment for young children in a home setting. Topics include: business aspects, program development, professionalism, managing personnel, and organizing the environment. CDA functional areas: learning environment, program management, professionalism. (Sp)

CHDV 151 Child Development Associate (CDA) Credentialing Preparation 3
Semester Prerequisite: Departmental Approval
This course, and accompanying field work, examines credentialing procedures and competency standards for the Child Development Associate (CDA) Credentialing Assessment. Students complete the resource file, are observed using the CDA observation instrument and prepare for the CDA observational assessment. Content of the course covers the functional area of professionalism. (F)
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CHDV 184 - Children and Stress 1
Semester Prerequisite: None
This course examines stress as it relates to children. Specific topics include symptoms and causes of stress, situations which are stressful for children, ways to help children cope with stress, and stress-reduction techniques for reducing stress. Specific information on divorce, death, family violence, and hospitalization are discussed. (Sp, Su)

CHDV 185 - Preventing Child Sexual Abuse; Teaching Personal Safety 1
Semester Prerequisite: None
This course explores preventing child sexual abuse through teaching personal safety to children. Topics include the sexual abuse prevention educational program for children, specific safety measures to prevent sexual abuse, and reporting and reporting protocol. It emphasizes appropriate ways of teaching personal safety to children, selecting appropriate safety materials, and adult concerns when teaching it. (F)

CHDV 186 - Children's Self-Esteem and Positive Discipline 1
Semester Prerequisite: None
This course looks at children's self-esteem, what it is, and where it comes from. It also discusses the difference between children who do well in school and those who do not. It focuses on practical suggestions and teaching positive discipline techniques that build self-esteem. CDA functional area: self guidance. (F, Su)

CHDV 188 - Caring for Young Children with Special Needs 2
Semester Prerequisite: None
This course focuses on young children with special needs and their families. It addresses the 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 working with children with special needs and their families in various settings. (F)

CHDV 189 - Helping Children Value Diversity 1
Semester Prerequisite: None
This course explores the various cultural groups and family structures that children encounter. It presents activities that caregivers can use to help children in recognizing, valuing, and respecting diversity. Development of multicultural and antibias curriculum is emphasized. (Sp)

CHDV 220 - Curriculum and Learning Environments for Preschoolers 4
Semester Prerequisite: 2.5 Minimum in CHDV 101, CHDV 111/
Departmental Approval. This course, with field work, explores developmentally appropriate preschool programming which promotes physical, cognitive, and social development. Emphasis is on active involvement of children in concrete experiences. Other topics include appropriate learning environments, materials and equipment, and children's learning objectives. CDA functional areas: learning environment, creative, physical, cognitive, and communication. (Sp)

CHDV 221 - Infant-Toddler Program Development 3
Semester Prerequisite: CHDV 101/Concurrently. This course, which includes field work, explores physical and emotional environments needed for quality early care for infants and toddlers. Focus includes developing nurturing skills, developmentally appropriate activities and materials, managing schedules and routines, observation, and record keeping skills. CDA functional areas: safe, healthy learning environment, physical, cognitive, communication, program management. (F, Su)

CHDV 222 - School-Age Child Care Program Development 2
Semester Prerequisite: None
This course examines the development of child care programs to meet the developmental characteristics of school-aged children (age 5–12). Content includes growth and development, patterns in the areas of physical, cognitive, social, and emotional development, appropriate equipment and activities, environment and program structures, and individual and group management. (Sp)

CHDV 230 - Child Care Center Administration 2
Semester Prerequisite: CHDV 220/Departmental Approval
This course examines the administrator's role in directing an early childhood center. It includes a systematic approach to program management. Topics include goal-setting, facility, licensing, health and nutrition, policy development, business practices, and personnel management. CDA functional areas: safe, program management, professionalism. (Sp)

CHDV 281 - Issues in Teaching in Child Care 3
Semester Prerequisite: 2.5 Minimum in CHDV 220, CHDV 222 Concurrently. This course explores the professional role of the teacher in implementing the child's daily program. Students gain skill in planning, goal-setting, evaluation, and personal dimensions of being a teacher. CDA functional areas: program management, professionalism. (F, Sp)

CHDV 282 - Child Development Practicum 2
Semester Prerequisite: 2.5 Minimum in CHDV 220, CHDV 281 Concurrently. Departmental Approval
This supervised field experience working directly with children in a child care program. Students gain skill in planning and implementing the daily child care program, and in setting and assessing goals for individual children and the classroom. A concurrent course (CHDV 281) integrates theory and practice. (F, Sp)

CHEM 120 - Basic General, Organic, and Biological Chemistry 4
Semester Prerequisite: Chemistry Inventory
Basic Skills Prerequisite: Reading Level 5, Writing Level 4, Math Level (See Class Schedule)
Introduces topics in general, organic, and biological chemistry that are used in health-related occupations. Includes atomic structure and bonding, chemical equations, stoichiometry, solutions, acids, bases, buffers, gas behavior, nuclear radiation, organic functional groups, and the biologically important compounds: carbohydrates, lipids, and proteins. (F, Su)

CHEM 125 - Basic Chemistry 4
Semester Prerequisite: Chemistry Inventory
Basic Skills Prerequisite: Reading Level 5, Writing Level 4, Math Level (See Class Schedule)
Intended for students who have not had high school chemistry or who require a refresher course. Measurement, problem solving, chemical formulas, chemical equations, stoichiometry, atomic structure, chemical bonding, gas laws, solutions, acids and bases are emphasized. (F, Su)

CHEM 130 - Biochemistry 4
Semester Prerequisite: 2.0 Minimum in CHEM 120/125
This course is designed to provide an understanding of the chemistry of life processes. Topics include: organic functional groups, enzymes, carbohydrates, lipids, proteins, metabolic pathways, nucleic acids, biochemical genetics, blood and respiratory chemistry, urine, electrolytes, acid-base balance, membranes, and nutrition. (F, Su)

CHEM 125 - Chemistry in Society 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 4, Math Level (See Class Schedule)
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 case-by-case basis with respect to issues in society that have significant chemistry components. (F, Su)

CHEM 151 - General Chemistry Lecture I 4
Semester Prerequisite: 2.0 Minimum in CHEM 125/High School Chemistry, Placement Test
Basic Skills Prerequisite: Reading Level 5, Writing Level 4, Math Level (See Class Schedule)
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, quantitative reasoning, stoichiometry, thermodynamics, atomic structure bonding, and modern materials. (F, Sp)

CHEM 152 - General Chemistry Lecture II 3
Semester Prerequisite: 2.0 Minimum in CHEM 151, MATH 121
Basic Skills Prerequisite: Math Level (See Class Schedule)
The second of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, sciences, or engineering. Topics include kinetics, stoichiometry, thermodynamics, electrochemistry, descriptive chemistry, and nuclear chemistry. (F, Su)
CHEM 161 General Chemistry Laboratory I
Semester Prerequisite: 2.0 Minimum in CHEM 161/Concurrently
Basic Skills Prerequisite: Reading Level 3, Writing Level 4, Math Level (See Class Schedule)
Laboratory course designed to complement CHEM 161. Stresses basic laboratory techniques, writing lab reports, and critical thinking exercises. Topics include density determination, synthesis, empirical formulas, molecular geometry, gas laws, pH, and water hardness. (F, Sp, Su)

CHEM 162 General Chemistry Laboratory II
Semester Prerequisite: 2.0 Minimum in CHEM 161, CHEM 162/Concurrently
CHEM 162 is the second semester general chemistry laboratory course. The main focus of the course is inorganic synthesis and analysis. (F, Sp, Su)

CHEM 152 Introductory Organic Chemistry
Semester Prerequisite: 2.0 Minimum in CHEM 151
A survey of the principles of organic chemistry. Introduces the student to structure nomenclature, chemical and physical properties, selected mechanisms, and the reactions of the most common classes of organic compounds. Other topics include polymers, optical isomerism, and selected reaction mechanisms. (Sp)

CHEM 192 Introductory Organic Chemistry Laboratory
Semester Prerequisite: 2.0 Minimum in CHEM 192/Concurrently
Designed for students in majors such as packaging, agriculture, and forestry who require only one credit of organic lab. It gives students an introduction to common techniques, instrument, and chemicals found in the organic laboratory. Particular attention is given to compounds studied in CHEM 192. (Sp)

CHEM 251 Organic Chemistry Lecture I
Semester Prerequisite: 2.0 Minimum in CHEM 152
The first lecture course of a two-semester sequence in organic chemistry for chemical engineering, chemistry, or preprofessional majors. Topics include structure and bonding, hybridization, nomenclature, stereochemistry, thermodynamics, and kinetics of organic reactions, functional groups including reactions and mechanisms, and applications of mass spectrometry. (F, Sp)

CHEM 252 Organic Chemistry Lecture II
Semester Prerequisite: 2.0 Minimum in CHEM 251
Continuation of CHEM 251. Topics include aromatic compounds, spectroscopy, organometallic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, esters, phenols, carbohydrates, lipids, and proteins. (Sp, Su)

CHEM 272 Organic Chemistry Laboratory
Semester Prerequisite: CHEM 251/Concurrently
Designed for students in majors such as chemistry, pre-med, and pre-pharmacy who require more than one credit of organic lab. It gives students experience with the chemicals, techniques, and equipment commonly employed in organic laboratories. Particular attention is given to compounds studied in CHEM 251 and 252. (Sp)

CHIN 115 Conversational Chinese I
Semester Prerequisite: None
Designed for people who have little background in the Chinese language and culture but wish to acquire conversational skills. Students will learn proper pronunciation, the four tones of Putonghua—the standard vernacular, basic sentence structures, and practical vocabulary for everyday use. Selected aspects of Chinese culture will be introduced. (F)

CHIN 121 Elementary Chinese I
Semester Prerequisite: None
Designed to help students build a foundation of Chinese language learning. Students will develop the basic skills in the area of speaking, listening, reading, and writing. Different aspects of the Chinese culture will be introduced. (F)

CHIN 122 Elementary Chinese II
Semester Prerequisite: CHIN 101/CHIN 121/Equivalent/Approval
Second course of a two-semester sequence in elementary Chinese. Further work on the four basic skills in the areas of speaking, listening, reading, and writing, with increasing emphasis on vocabulary building, conversation, and character writing. Different aspects of the Chinese culture will be discussed. (F, Sp, Su)

CHE 101 Acute Care Nurse Assistant/Orderly
Semester Prerequisite: None
This course will prepare an individual for employment as a Nursing Assistant/Orderly in a hospital or home health care agency. The course will provide the knowledge and skills needed in order to provide safe basic patient care. (F, Sp, Su)

CHE 108 Long-Term Care Nurse Aide
Semester Prerequisite: None
This course will prepare women and men to be a nurse aide in a nursing home. This is a state-approved certified course and will provide specific knowledge and skills required for a nurse aide to safely function in a nursing home facility. (F, Sp, Su)

CHE 111 Medical Insurance Billing I
Semester Prerequisite: CHE 121/Equivalent
First course in a two-semester sequence which introduces the student to insurance billing, diagnostic and procedure coding for physician billing, and comprehensive billing directions for Medicare. The student must have a grade of 2.5 or better to continue with Medical Insurance Billing II. (F)

CHE 112 Medical Insurance Billing II
Semester Prerequisite: 2.5 Minimum in CHE 111
Second course in a two-semester sequence. Comprehensive billing directions for BCBS of Michigan, Medicaid, and other commercial insurance carriers for billing in the physician's office are covered. A certificate of completion is awarded for Medical Insurance Billing II if a grade point of 2.5 or better is earned in CHE 111 and CHE 112. (Sp)

CHE 121 Medical Terminology for Allied Health I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 5
Medical Terminology I will provide a basic knowledge of word building, use, pronunciation, and spelling of medical terms. The use of medical terms in periodicals, textbooks, and medical care areas will be stressed. This course provides a sound basis for those students interested in health careers. (F, Sp, Su)

CHE 122 Medical Terminology for Allied Health II
Semester Prerequisite: CHE 121
Medical Terminology II will teach the student to utilize medical terminology in context by applying terms to the function and structure of body systems and specific disease conditions. Students will build on knowledge learned in Medical Terminology I. (F, Sp)

CHE 126 Medical Terminology for Insurance Examiners
Semester Prerequisite: Medical Technician/Insurance Examiner/Approval
Medical Terminology is a technically exact vocabulary used by professionals to speak and write precisely. This medical terminology course is designed for insurance examiners and insurance medical technicians. The use of medical terms in records and specific medical areas will be stressed. (F, Sp, Su)

CHE 132 Health Unit Clerk/Coordinator
Semester Prerequisite: CHE 121
Course is designed to introduce the student to basic health and coordinator skills. Subject matter will include communication skills, computers, customer service, chart forms, admissions, transfers, discharges, death and dying, pharmacology, laboratory tests, transcribing physician orders, and job application skills. Clinical component is included. (F, Sp, Su)

CHE 143 Phlebotomy Technician
Semester Prerequisite: None
This course is designed to prepare a person to function as a phlebotomy technician. It will provide the knowledge and skill necessary to safely and skillfully obtain a blood specimen from a patient. The course includes lecture, laboratory, and clinical laboratory. (F, Sp)

CHE 145 Central Service Technician
Semester Prerequisite: None
Prepares individuals to function competently in the central service department of a health care facility. Duties include but are not limited to processing of patient care equipment, supplies, and instruments for use in all departments. Includes principles of cleanliness, decontamination, cleaning, disinfection, sterilization, and distribution of medical supplies. (F)

CHE 201 Dietary Manager I
Semester Prerequisite: Departmental Approval
The first course in a three-semester sequence which will prepare students for a career as a dietary manager. The course will include both classroom and field experience. Topics such as the role of the supervisor, quality assurance, and nutritional principles will be included. (F)
**CHSE 202 - Dietetic Manager II**

**Semester Prerequisite:** CHSE 201

The second course in a three-semester sequence which will prepare students for a career as a dietary manager. This course will include both classroom and field experience. Students will be prepared to obtain both state and national credentials as a dietary manager. (Sp)

**CHSE 208 - Advanced Dietary Therapy**

**Semester Prerequisite:** CHSE 201/401 Class

A one-semester course which is designed to provide advanced knowledge of diet and therapy and nutritional care for dietary managers. The course will include knowledge of disease states, as well as laboratory data and nutritional assessment techniques as they relate to providing adequate nutritional care to patients. (Su)

**CHSE 210 - RN State Board Update**

**Semester Prerequisite:** Graduate Nurse, Diploma/ADN/BSN/Departmental Approval

This course incorporates 12 hours of directed independent study in basic psychiatric nursing practice or medical-surgical, obstetrical, or pediatric nursing practice. Students work through progressive, structured activities including home study, class participation, group discussion, and practice tests to challenge critical-thinking skills in complex simulated patient scenarios. (F, Sp, Su)

**CHSE 213 - Basic Psychiatric Technician**

**Semester Prerequisite:** None

This course covers concepts of personality development, identification of mental illnesses, patient rights, aspects of confidentiality, therapeutic interventions, and specific methods of evaluating patient care. Supervised clinical experience provides opportunities for students to apply classroom material to practical situations. (F, Sp)

**CHSE 215 - Health Careers Directed Study**

**Semester Prerequisite:** Graduate Nurse, Diploma/ADN/BSN/Departmental Approval

A directed study course for international students and inactive nurses. This course focuses on nursing practice in the American health care system, including use of nursing process, roles, dependent/autonomous activities, specialty equipment, etc. Observations in local hospitals, lectures, skills practice sessions, and independent study may all be used. (F, Sp, Su)

**CHSE 222 - Special Transportation Health Care**

**Semester Prerequisite:** Special Transportation Employee/Approval

Course is designed for special transportation health care personnel/employees, drivers/administrators who transport medically handicapped or mentally fragile individuals. This course covers various medical diseases and treatments, and provides practice skills pertinent for job performance. (F, Sp, Su)

**CHSE 223 - Health Care Seminar - Special Transportation**

**Semester Prerequisite:** Special Transportation Employee/Approval

This course is for special transportation personnel and other human service personnel to teach ways of reducing exposure and transmission of various infectious diseases. The content will include etiology, sources of transmission, and symptomatology of various infectious: Hepatitis B, HIV and Herpes. (F, Sp, Su)

**CHSE 224 - Special Transportation Health Seminars**

**Semester Prerequisite:** None

This seminar is designed as a yearly review and updating of skills in areas of need as designated by the contracting agency. Topics could include, but not limited to, medical emergencies, inpatient management, and oxygen therapy. Communicate skills, and physical management of aggressive behavior. (F, Sp, Su)

**CHSE 225 - Care of the Medically Fragile Child**

**Semester Prerequisite:** None

This course is designed for healthcare personnel who work with and/or provide care for the medically fragile child. Content will include diseases and medical conditions common to the fragile child. Basic anatomy and physiology, potential problems, and medications and their side effects will also be covered. (F, Sp, Su)

**CHSE 228 - School Bus Health Care**

**Semester Prerequisite:** Special Transportation Employee/Approval

Course is designed for special transportation health care personnel/employees/assistants who transport medically handicapped or mentally fragile individuals. This course covers various medical diseases, treatments, and provides practice skills pertinent for job performance. This course includes dealing with aggressive behavior and steps in fire drill. (F, Sp, Su)

**CHSE 235 - Pharmacy Technician**

**Semester Prerequisite:** MATH 104/Math 050 Competency

**Basic Skills Prerequisite:** Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)

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 controlling drugs in either setting. (F)

**CHSE 236 - Pharmacology Technician Elective**

**Semester Prerequisite:** CHSE 236

The Pharmacology Technician Elective emphasizes the technical nature of the skills required to practice in a pharmacy setting. The course is designed to provide practical application of pharmacology theory to the health care setting. (Sp)

**CISB 100 - Introduction to Computer Information Systems**

**Semester Prerequisite:** None

**Basic Skills Prerequisite:** Reading Level 3, Writing Level 2

This course provides an introduction to computers, their role in managing business information systems, their influence on society, and their use in personal productivity. A hands-on introduction to major computer tools, including Windows word processing, spreadsheet, and database management applications. (F, Sp, Su)

**CISB 102 - Introduction to the Internet in Business**

**Semester Prerequisite:** None

This course is designed to introduce the student to the use and potential use of the Internet for business. Hands-on assignments will allow the student experience using the Internet. (F, Sp, Su)

**CISB 104 - Introduction to DOS**

**Semester Prerequisite:** None

Students in this course develop skill in applying the most common commands of the disk operating system (DOS) used by IBM type microcomputers. Students also learn how to use DOS files and how to create simple batch files. (F, Sp, Su)

**CISB 107 - DOS Management**

**Semester Prerequisite:** CISB 104

Advanced concepts in managing a DOS based operating system. Techniques are presented in the areas of: Basic program to startup, system organization, batch files, software conflict detection and correction, disk compression, and virus detection and prevention. Assignments include the use of DOS provided and third party software in diagnosing and optimizing system performance. (F, Sp, Su)

**CISB 119 - Introduction to Windows Programming With Visual BASIC**

**Semester Prerequisite:** MATH 062/Equivalent

**Basic Skills Prerequisite:** Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)

This course introduces students to Windows programming using the Visual Basic programming environment. Students will learn to develop basic applications by designing and creating a user interface and writing the necessary procedures. Students also learn to use logic development tools and object oriented programming techniques. (F, Sp, Su)

**CISB 120 - Introduction to Programming and Logic Using BASIC**

**Semester Prerequisite:** MATH 062/Equivalent

**Basic Skills Prerequisite:** Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)

A first course in computer programming and programming logic for computer information majors and others wanting an intensive introduction to problem-solving techniques using the QuickBASIC programming language. (F, Sp, Su)

**CISB 122 - Advanced Windows Programming With Visual BASIC**

**Semester Prerequisite:** CISB 100, CISB 119

This second course in the Visual Basic programming sequence. This course presents programming in the Windows environment and leads to the creation of functional Windows application programs. Topics include advanced form design, sequential and random access files, calling objects from a DLL, and using OLE and MDI in Windows. (F, Sp)

**CISB 130 - Data Communications**

**Semester Prerequisite:** CISB 100, CISB 119/CISB 120

The course provides a comprehensive introduction to data communications systems, the major components, how they are integrated, and the differences between the various networks and network carriers. Students learn the terminology and major protocols to a level adequate to design application programs and discuss data communication topics with other professionals. (F, Sp, Su)
CISB 146  Client/Server Computing  3
Semester Prerequisite: CISB 100, CISB 119/CISB 120
The student will study the various features of the client/server environment including both software and hardware components. Communications technology, network operating systems, and training issues are investigated. Case studies are used. (F, Sp)

CISB 141  PowerBuilder  2
Semester Prerequisite: None
Students will learn how to use PowerBuilder, a graphical client/server application tool. Concepts covered will include the creation of applications, making modifications to the database, working with built-in functions, and creating objects in the graphics user interface environment. (F, Sp)

CISB 145  Operations Internship I  2
Semester Prerequisite: CISB 100, CISB 111, CISB 119/CISB 120 Approval
This internship provides the student with on-the-job experience as a computer operator. The student may take this internship concurrently with the first at a different site. This internship requires 150 hours of experience. (F, Sp, Su)

CISB 146  Operations Internship II  2
Semester Prerequisite: CISB 145
This internship provides the student with on-the-job experience as a computer operator. The student may take this internship concurrently with the second at a different site. This internship requires 150 hours of experience. (F, Sp, Su)

CISB 170  COBOL I  4
Semester Prerequisite: CISB 100, CISB 120
An introductory course in COBOL programming emphasizing syntax, structured programming, and business application processing concepts. Coding standards and program documentation are introduced. Topics include control breaks, table processing, data validation, sort report processing, and sequential file maintenance. (F, Sp, Su)

CISB 175  Beginning RPG on the AS/400  3
Semester Prerequisite: CISB 100
Develop competence in RPG programming. This course includes problem definitions, file procedures, control-level processing, physical and logical file processing, and fundamentals of interactive programming. An AS/400 computer will be used and RPG/400 topics covered. (F)

CISB 176  AS/400 Environment  1
Semester Prerequisite: None
This course will provide the student with a customized set of materials about the AS/400 computer environment. The student and instructor will establish the specific course content from the available AS/400 tutorials and IBM Discover Education courses the first week of class. (F, Sp, Su)

CISB 177  AS/400 Operations  3
Semester Prerequisite: CISB 175
A hands-on course in AS/400 operations. The course will cover the AS/400 architecture and facilities; operational requirements; such as save and restore, hardware and software installation, configurations for local and remote communications, CICS and IMS programming, system problem determination, and problem resolution. (Sp)

CISB 180  C Programming with Business Application  3
Semester Prerequisite: CISB 100, CISB 120
Students will use professional development tools to become familiar with the "C" programming language by designing, implementing, and testing programming projects. Topics include pointers, linked lists, data structures, and dynamic memory allocation. (F, Sp)

CISB 199  Introduction to Business Use of Information Technologies  3
Semester Prerequisite: None
This open entry/open exit course is designed to help the busy professional become better versed in the application of information technologies in the business world. The student may choose from activities providing a basic awareness of information technologies applicable to businesses, through basic hands-on skills in software productivity tools to CASE driven analysis and application of business information technology. (F, Sp, Su)

CISB 200  Information Systems Technology and Problem Solving  3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
Fundamental changes 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 practice TQM and work in teams. (F, Sp, Su)

CISB 201  Information Systems Auditing  3
Semester Prerequisite: CISB 160
This course covers basic concepts important in the auditing of computer systems. The use of general and application controls of information systems will be discussed. Other topics include computer crimes, computer ethics, and auditing standards. (F)

CISB 227  Advanced Concepts in Computer Information Systems  2.5
Semester Prerequisite: Departmental Approval
With this course, students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of either 15 classroom hours or 24 independent study hours. (F, Sp, Su)

CISB 228  Advanced Concepts in Computer Information Systems  5
Semester Prerequisite: Departmental Approval
With this course, students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of either 25 classroom hours or 48 independent study hours. (F, Sp, Su)

CISB 230  Introduction to Local Area Networks  3
Semester Prerequisite: CISB 139
Students in this course learn how to install and maintain a Local Area Network (LAN). Topics start with basic network concepts and terms, then advance students to a point where they can install and maintain a particular network system such as Novell. (F, Sp)

CISB 231  Advanced Local Area Networks  3
Semester Prerequisite: CISB 230 Equivalent
Students in this course learn advanced administration techniques for a typical Local Area Network such as Novell NetWare. Topics start with an in-depth review of networking technology, then advance students to a point where they can tune a network to achieve maximum performance. (F, Sp)

CISB 235  Microcomputer Hardware Support  3
Semester Prerequisite: CISB 100, CISB 164, CISB 130
This course provides the student with practical, hands-on experience in installing, maintaining, and troubleshooting microcomputer hardware and software. Topics include CPU, storage devices, add-on boards, video displays, printers, communication devices, software installation, and configuration. (F, Sp)

CISB 236  Microcomputer Software Support  3
Semester Prerequisite: CISB 137, CISB 195, CISB 113/CISB 120
This course provides students with the skills necessary to diagnose and correct problems that microcomputer users frequently encounter in using software. The course covers installing operating systems, installing and upgrading applications, memory optimization, printer fonts, printer emulation, remote site support, telecommunication support, and software training. (F, Sp)

CISB 240  Operating Systems  3
Semester Prerequisite: CISB 190, CISB 119/CISB 120
Covers what operating systems are, why they exist, what they do, and how they interface with the operators and programmers. Main memory management and processor scheduling are studied. The MS-DOS, Windows, UNIX, AS/400, MVS, and VM operating systems are discussed. (F, Sp)
CISB 245  Programming Internship  3
Semester Prerequisite: Departmental Approval

This internship provides the student with on-the-job experience as a computer programmer. Two hundred hours of experience at a local computer information systems site is required. The student is expected to write or maintain programs, create documentation, learn job control language, and work on interactive systems. (F, Sp, Su)

CISB 247  Microcomputer Project  2
Semester Prerequisite: Departmental Approval

With this course, students apply what they have learned about programming and systems development as a part of an internship, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of 150 internship hours or 90 independent study hours. (F, Sp, Su)

CISB 248  Advanced Concepts in Computer Information Systems  2
Semester Prerequisite: Departmental Approval

With this course, students explore advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of 90 classroom hours or 45 independent study hours. (F, Sp, Su)

CISB 248  Advanced Concepts in Computer Information Systems  3
Semester Prerequisite: Departmental Approval

This course introduces students to advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of 90 classroom hours or 45 independent study hours. (F, Sp, Su)

CISB 250  Database Concepts  3
Semester Prerequisite: CISB 100, CISB 119/120

Students learn the functions of a database management system. The relational model and SQL are used. Normalization and database design are covered. The CODASYL model is discussed and emerging trends are studied. (F, Sp)

CISB 256  Multimedia in Business  3
Semester Prerequisite: CISB 119/CISB 120

A detailed course covering fundamentals of modern usage of multimedia in business. Students will not only apply problem-solving skills and instructional design techniques to evaluate multimedia applications, but also will develop and modify simple, but practical, multimedia applications and demonstrate skills learned in a multimedia project. (F, Sp)

CISB 257  Multimedia Presentations  2
Semester Prerequisite: CISB 100/Computer Experience

In this course, the student will develop presentations using one or more presentation tools, such as PowerPoint, and learn how to use clipart, graphics, and animations to enhance the presentations. (F, Sp)

CISB 258  Developing Multimedia Home Pages for the WWW  2
Semester Prerequisite: CISB 119/CISB 120/Equivalent Computer Programming

In this course, the student will study design and create HTML documents that can be accessed by the World Wide Web. Students will be introduced to HTML and learn how to create home pages. (F, Sp)

CISB 259  Introduction to Developing Multimedia Training  2
Semester Prerequisite: CISB 119/CISB 120/Equivalent Computer Programming

In this course, the student will learn how to use multimedia techniques to develop multimedia training. (F, Sp)

CISB 260  Systems Analysis and Design  4
Semester Prerequisite: CISB 100, CISB 119/CISB 120

This course presents concepts and techniques used in development of computer business application systems. The traditional approach for systems development is presented and compared to the approach used in a 4th Generation Environment. Structured techniques are utilized in the development approach as well as Computer Assisted Software Engineering (CASE) tools. (F, Sp)

CISB 261  Systems Implementation with CASE Tools  3
Semester Prerequisite: CISB 260

This course applies the concepts and techniques of systems analysis and design developed in CISB 260 into working systems. Computer Assisted Software Engineering tools will be used to develop a business computer system. Students will be teamed into project teams for the course project. (F, Sp)

CISB 270  COBOL II  3
Semester Prerequisite: CISB 170

An advanced COBOL course covering indexed file creation and updating, subprogram concepts, and writing interactive programs using CICS. Copy libraries are used, and a system of related programs is completed as a class project. (F, Sp)

CISB 271  COBOL/400: Implementing the COBOL Language on the AS/400  3
Semester Prerequisite: CISB 170, AS/400 Experience

This course provides the student with information and support necessary to master the implementation of COBOL programming in the AS/400 environment. Students will learn to use the user interface and relational file format native to the AS/400 as well as learning how to communicate between programs. (Sp)

CISB 272  Object-Oriented COBOL  3
Semester Prerequisite: CISB 270/Equivalent Work Experience

This course is intended for those already familiar with the COBOL language. It includes the concepts and terminology of object-oriented development and uses object-oriented COBOL, as the programming tool. Students will complete assignments using object-oriented COBOL. (F)

CISB 275  Advanced RPG on the AS/400  4
Semester Prerequisite: CISB 175

A detailed course covering fundamentals of the modern RPG programming language. The course will cover RPG/400 programming techniques, modular programming, relational database manipulation and techniques, and system interaction. The course will use an AS/400 computer in the native AS/400 environment. (Sp)

CISB 280  C++ Language with OOP  4
Semester Prerequisite: CISB 190

Students will use the Borland Integrated Development Environment to become familiar with the C++ programming language and object-oriented programming and design by designing, implementing, and testing programming projects. (F, Sp)

CISB 281  Visual C++ Programming  3
Semester Prerequisite: CISB 122

An introduction to the fundamentals of the modern usage of C++ as a control linking program in the Windows environment. Emphasis will be placed on using existing classes and visual tools to rapidly create applications and linkages between applications. Students will learn to use object-oriented techniques with a wide collection of existing C++ tools. (F, Sp)

CISB 282  C/400: Implementing the C Language on the AS/400  3
Semester Prerequisite: CISB 190, AS/400 Experience

This course provides the student with information and support necessary to master the implementation of C programming in the AS/400 environment. Students will learn to use the user interfaces and relational file format between programming applications. (F, Sp)

CISB 287  ICCP Core Exam Review Session 1  1.5
Semester Prerequisite: None

Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for the either the CCP, CDP, or CSP. This seminar reviews (1) human and organizational framework, and (2) associated disciplines. (Sp, Su)

CISB 288  ICCP Core Exam Review Session 2  1.5
Semester Prerequisite: None

Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CCP, CDP, or CSP. This seminar reviews (1) data and information and (2) technology. (Sp, Su)

CISB 289  ICCP Core Exam Review Session 3  1.5
Semester Prerequisite: None

Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CCP, CDP, or CSP. This seminar reviews (1) data and information and (2) technology. (Sp, Su)

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVL 101</td>
<td>Civil Drafting</td>
<td>4</td>
<td>Semester Prerequisite: DTDS 100. Civil Drafting is a course which emphasizes traverse and topographical drawing problems. The course will equip the student with the skills and line techniques, and the ability to prepare a clear, readable, graphical presentation from rough notes furnished by the survey party. (Sp)</td>
</tr>
<tr>
<td>CIVL 115</td>
<td>Survey Fieldwork</td>
<td>2</td>
<td>Semester Prerequisite: None. The course consists of fieldwork using surveying equipment and techniques related to construction projects such as cloth tape, drag chain, chaining pins, levels, level rods, and transits. (F, Sp)</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying</td>
<td>4</td>
<td>Semester Prerequisite: MATH 114/TECH 101/TECH 110, DTDS 100. Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997. (See Class Schedule.) Introduces basic surveying practices and procedures. The course consists of field work involving the use of surveying equipment and procedures (cloth tape, drag chain, Dumpy level, automatic level, level rod, optical transit, laser level, electronic transit, Total Station) and basic computational techniques (chainings,ordinates, bearings, coordinates, and traverses). (F, Sp)</td>
</tr>
<tr>
<td>CIVL 124</td>
<td>Route Survey</td>
<td>4</td>
<td>Semester Prerequisite: CIVL 120. Trigonometry. This course includes surveying computations in such areas as horizontal curves, vertical curves, spirals, and data needed for highway construction layout. Also includes work with surveying computer software and field work with levels, total stations, and data collectors. (F, Sp)</td>
</tr>
<tr>
<td>CIVL 131</td>
<td>Traffic Technology</td>
<td>3</td>
<td>Semester Prerequisite: None. The course introduces the basic principles of traffic engineering design, signage, and pavement markings, 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)</td>
</tr>
<tr>
<td>CIVL 132</td>
<td>Construction Materials</td>
<td>5</td>
<td>Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test. Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997. (See Class Schedule.) The students will study techniques and equipment used in constructing bridges, buildings, highways, and pipelines. Deals with the determination of properties of aggregates, concrete, and other bituminous materials. Teaches methods of designing concrete mixtures for different uses and methods of sampling and testing. Comparison of building codes and construction specifications will be covered. (Sp)</td>
</tr>
<tr>
<td>CIVL 135</td>
<td>Soils Technology</td>
<td>3</td>
<td>Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test. Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997. (See Class Schedule.) Exploring sampling, testing, and evaluating subsurface materials and their use on construction projects. This course introduces to methods of subsurface drainage, soil classifications, and physical properties of soils. Includes discussion, demonstration, and performance with equipment used in density testing. (Sp)</td>
</tr>
<tr>
<td>CIVL 136</td>
<td>Hydrology and Highway Technology</td>
<td>5</td>
<td>Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test, CIVL 131. Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997. (See Class Schedule.) This course is an introduction to highway inventory, planning, organization, elements of design, and drainage structures. Emphasis is placed on these elements as components of final highway plans. Analysis of precipitation and the attendant runoff and recharge will be introduced. (Sp)</td>
</tr>
<tr>
<td>CIVL 189</td>
<td>Concrete Paving</td>
<td>2</td>
<td>Semester Prerequisite: On-the-job Construction Experience/ Appropriate Technical Training. This is a course on the practical aspects of inspection and quality control of Portland Cement concrete paving projects. (F, Sp)</td>
</tr>
<tr>
<td>CIVL 200</td>
<td>Civil Mathematics</td>
<td>5</td>
<td>Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test. Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997. (See Class Schedule.) This course covers the applications of differential calculus and integral calculus to practical technical problems. Topics include related rates, maximum and minimum problems, and areas under curves. (Sp)</td>
</tr>
<tr>
<td>CIVL 241</td>
<td>Statics and Strength of Materials</td>
<td>5</td>
<td>Semester Prerequisite: CIVL 200/Math Placement Test. Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997. (See Class Schedule.) This course introduces structural terminology and concepts. The general behavior of structural members in compression, stress, strain, creep, fatigue, yield, torsion, 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 in the course. (Sp)</td>
</tr>
<tr>
<td>CJUS 101</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
<td>Semester Prerequisite: None. Basic Skills Prerequisite: Reading Level 6, Writing Level 6. A survey course designed to provide students with a current, coordinated, and comprehensive overview of criminal justice as an institution and as a system. Emphasizes historical, philosophical, constitutional, and organizational perspectives. (F, Sp, Su)</td>
</tr>
<tr>
<td>CJUS 102</td>
<td>Crime Causes and Conditions</td>
<td>3</td>
<td>Semester Prerequisite: None. 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)</td>
</tr>
<tr>
<td>CJUS 103</td>
<td>Criminal Law</td>
<td>3</td>
<td>Semester Prerequisite: CJUS 101. Study of substantive criminal law. Includes classification of crimes, common law concepts, and elements of specific crimes. (F, Sp, Su)</td>
</tr>
<tr>
<td>CJUS 106</td>
<td>Juvenile Problems: Control and Prevention</td>
<td>3</td>
<td>Semester Prerequisite: None. Basic Skills Prerequisite: Reading Level 5, Writing Level 5. This course emphasizes 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. (F, Sp, Su)</td>
</tr>
<tr>
<td>CJUS 130</td>
<td>Local Detention</td>
<td>3</td>
<td>Semester Prerequisite: None. Basic Skills Prerequisite: Reading Level 5, Writing Level 5. This course explores 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 jails and prisons regarding operations and differing clientele are also covered. (F, Sp)</td>
</tr>
<tr>
<td>CJUS 131</td>
<td>Introduction to Corrections</td>
<td>3</td>
<td>Semester Prerequisite: None. Basic Skills Prerequisite: Reading Level 5, Writing Level 5. Introduction to agencies and processes within the correctional system. An examination of correctional officer behavior, corrections legislation, the courts, correctional institutions and their operation, and administration. Includes overview of history, sentencing, probation, parole, and community corrections. The course is required for the corrections officer vocational certificate. (F, Sp)</td>
</tr>
<tr>
<td>CJUS 133</td>
<td>Juveniles in Corrections</td>
<td>3</td>
<td>Semester Prerequisite: None. Legal aspects of the juvenile court process, detention, case supervision, and juvenile after-care will be examined. Both public and private agencies will be discussed in the treatment of the juvenile offender. (F, Sp, Su)</td>
</tr>
<tr>
<td>CJUS 134</td>
<td>Probation and Parole</td>
<td>3</td>
<td>Semester Prerequisite: CJUS 101/CJUS 131. An introductory level course in probation and parole with strong emphasis on counseling, interviewing skills, and supervision techniques. Students will also learn the mechanics of writing violation, progress, and pre-sentence reports. (F, Sp, Su)</td>
</tr>
</tbody>
</table>
CJUS 135 Legal Issues in Corrections 3
Semester Prerequisite: CJUS 101/CJUS 131
Study of current constitutional, federal and state law as it pertains to penal institutions, inmates, and correctional employees. The course will provide students with insight into policy considerations beyond state and federal law, legal process, court decisions, and inmate rights. This course is required for the correctional officer vocational certificate. (F, Sp, Su)

CJUS 170 Emergency Dispatching I 4
Semester Prerequisite: None
This course has been designed to introduce the student to the history and role of the telecommunicator, equipment systems utilized in dispatching, the correct spelling of police/trauma medical terminology, stress management, legal issues, reference sources, emergency plans, history of police/fire/EMS services, and hazardous materials. (F, Sp)

CJUS 171 Emergency Dispatching II 4
Semester Prerequisite: CJUS 170
This course has been designed to introduce the student to effective communication skills, dispatch techniques, first aid and CPR techniques, telephone techniques, call intake processing, and emergency medical dispatching. Simulation exercises are included. (F, Sp)

CJUS 201 Criminal Justice Organization and Administration 3
Semester Prerequisite: CJUS 101
Examines the primary concepts of criminal justice organization and administration emphasizing processes and theories, communications, leadership, personnel, budgeting, planning, information management, and community relations. (F, Sp, Su)

CJUS 203 Criminal Procedure 3
Semester Prerequisite: CJUS 101, CJUS 103
Study of criminal procedural law. Includes topics of arrest, search and seizure, and admissibility and confessions; suspect identification; and rules of evidence. (F, Sp)

CJUS 204 Criminal Investigation 4
Semester Prerequisite: CJUS 103
Examines the fundamentals of criminal investigation such as crime scene procedures, collection and preservation of physical evidence, interviewing, interrogation, and latent investigation. (F, Sp)

CJUS 205 Policing into the 21st Century 3
Semester Prerequisite: CJUS 101
This course is designed to provide the student with an understanding of the philosophy of community policing. As such, the components and processes involved in the implementation of non-traditional policing methods as well as the development of a partnerships between the community and the police will be examined. (F, Sp)

CJUS 206 Interview and Interrogation 2
Semester Prerequisite: None
Provides students with the techniques and procedures utilized in conducting lawfully admissible and successful investigative interrogations and interviews. (F, Sp, Su)

CJUS 208 Organized Crime Activity 2
Semester Prerequisite: None
Provides a comprehensive overview of the nature, history, and current status of organized crime. Analyzes the evolution of crime as an economic entity in legitimate, as well as illegitimate, areas of the business world. (F, Sp, Su)

CJUS 215 The Criminal Mind 2
Semester Prerequisite: None
An introduction to the working of the criminal mind. Basic concepts of mental functioning will be addressed with emphasis on behavioral motivation in criminal conduct. (F, Sp, Su)

CJUS 216 Psychology of Sex Offenders 2
Semester Prerequisite: None
Examines the motivation of the sexual offender, including background, personality characteristics, and common behaviors. Investigative techniques and procedures are also emphasized. (F, Sp, Su)

CJUS 242 Unarmed Defense 3
Semester Prerequisite: None
Hands-on techniques to prepare students to properly and effectively handle law enforcement related physical confrontations. Includes use of force decision-making skills, pressure points, control holds, and handcuffing. (F, Sp, Su)

CJUS 245 Report Writing in Criminal Justice 2
Semester Prerequisite: CJUS 101/CJUS 131/CJUS 150/Approval
Designed to meet the needs of criminal justice writing. Components include grammar, punctuation, sentences, paragraphs, styles of writing, and proper documentation of work experience. Frequent writing practice. (F, Sp, Su)

CJUS 248 Physical Fitness for Criminal Justice 3
Semester Prerequisite: None
Designed to assist the student in developing and maintaining their health status. The course includes aerobic, strength, flexibility, and stretching exercises along with nutrition information. (F, Sp, Su)

CJUS 250 Correctional Institutions 3
Semester Prerequisite: None
Examines the historical development of corrections institutions in the United States. The organizational structure, purpose, programs, security aspects, and prison 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
Semester Prerequisite: None
Emphasis is placed on the needs, histories, and development of the recipient of correctional services. Students will gain insight into the behavior and motivations of the corrections client and learn intervention strategies. This course is required for the correctional officer vocational certificate. (F, Sp, Su)

CJUS 255 Human Relations in Criminal Justice 3
Semester Prerequisite: CJUS 101/CJUS 131
This course focuses on understanding those aspects of interpersonal relations most directly linked to attainment of organizational and individual goals in work settings. This course is required for the correctional officer vocational certificate. (F, Sp, Su)

CJUS 260 Criminal Investigation and Procedures 3
Semester Prerequisite: Departmental Approval
Designed for hands-on, practical instruction in the following areas: crime scene processing, on-scene preliminary investigation, witness interviewing, suspect identification, latent prints, photography, child abuse, sexual assault, narcotics, and preparation for court. (F, Sp, Su)

CJUS 261 Michigan Criminal Law and Procedure 3
Semester Prerequisite: Departmental Approval
Designed for hands-on, practical instruction in criminal law and procedure as it pertains to law enforcement in the State of Michigan. Topics include crimes against persons and property, regulatory crimes, public order crimes, juvenile law, admissions/confessions, laws of arrest, search and seizure, and suspect identification. (F, Sp, Su)

CJUS 262 Patrol Procedures and Tactics 3
Semester Prerequisite: Departmental Approval
The course is designed to identify and utilize proper patrol techniques and procedures necessary for a police officer to function safely and effectively. Topics include preparation for patrol, types of patrol, responding to crimes in progress, roadblocks, civil process, handling abnormal persons, and officer survival. (F, Sp, Su)

CJUS 263 Standard First Aid 2
Semester Prerequisite: Departmental Approval
Designed to introduce the roles and responsibilities of a law enforcement officer at the scene of a medical emergency based upon American Red Cross standard first aid and CPR training. (F, Sp, Su)

CJUS 264 Report Writing in Law Enforcement 1
Semester Prerequisite: Departmental Approval
Designed to prepare the student to effectively and efficiently write a proper police report that will serve as a basis for the issuance of a warrant and court prosecution. Topics include obtaining information, basic English skills, criminal justice terminology, and proper formatting. (F, Sp, Su)

CJUS 265 Highway Traffic Operations 3
Semester Prerequisite: Departmental Approval
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
Semester Prerequisite: Departmental Approval
This course is concerned with technical and physical techniques employed in the investigation of crime. The course involves traditional classroom as well as field experiences. (F, Sp)

CJUS 267 Law Enforcement Physical Training 2
Semester Prerequisite: Departmental Approval
Designed to assist law enforcement students in developing and improving their physical fitness. The course includes running, aerobics, calisthenics, and stretching. (F, Sp, Su)

CJUS 288 Precision Driving 3
Semester Prerequisite: Departmental Approval
The course is designed to identify and utilize proper driving techniques and procedures using the principles of precision driving. Course involves both classroom and hands-on driving. (F, Sp)

CJUS 291 Directed Independent Study 1
Semester Prerequisite: Departmental Approval
Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments which will introduce them to research procedures and resources. (F, Sp, Su)

CJUS 292 Directed Independent Study 2
Semester Prerequisite: Departmental Approval
Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments which will introduce them to research procedures and resources. (F, Sp, Su)

CJUS 293 Directed Independent Study 3
Semester Prerequisite: Departmental Approval
Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments which will introduce them to research procedures and resources. (F, Sp, Su)

CJUS 285 Law Enforcement Field Study 2
Semester Prerequisite: Departmental Approval
Sixteen eight-hour shifts are scheduled with an approved police department. Written reports are required. (F, Sp, Su)

CJUS 288 Corrections Field Study 3
Semester Prerequisite: Departmental Approval
The student will be placed in a local or state corrections facility that will allow him or her to experience many facets of correction operations. Weekly written reports are required and periodic meetings are mandatory. A minimum of 160 hours is required. (F, Sp, Su)

CPSC 130 Machine Controls and Setup 4
Semester Prerequisite: CPSC 110
Focuses on the setup and operation of a variety of CNC machines ranging from simple 3-axis to sophisticated 5-axis conversational controls. Topics include proper machine start-up and shut-down, tool data management, fixture alignment, program loading and editing. (F, Sp)

CPSC 194 Computerized Numerical Control Project Lab 4
Semester Prerequisite: Departmental Approval
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)

CPSC 210 SMART-CAM 4
Semester Prerequisite: CPSC 110
SMART-CAM is a powerful graphics based programming software for CNC machine tools. SMART-CAM software is designed to generate CNC programs from mechanical CAD drawings. Students will use SMART-CAM to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment. (F, Sp)

CJUS 215 Crimeanalysis 4
Semester Prerequisite: CJUS 120
Manufacturing Expert (MEX) is an advanced 3-D surface design and CNC software. This course will cover surface creation including Bezier and NURBS, primitives such as cones and toroids, and surface filling. Full 5-axis CNC programs will be created, run, and checked on a coordinate measuring machine. (F, Sp)

COOP 210 Cooperative Education (Technology) 3
Semester Prerequisite: Departmental Approval
Provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trainee in a planned, structured, and supervised work experience. Students apply knowledge and skills learned in academic courses to real-world situations. (F, Sp, Su)

CPOA 130 Seminar: Special Subjects .5
Semester Prerequisite: None
Seminars are designed to expand skills and abilities in the word processing field and are continually upgraded. Seminars CPOA 130 and CPOA 131 cover specific functions on various software packages. (F, Sp, Su)

CPOA 131 Seminar: Special Subjects .75
Semester Prerequisite: None
Seminars are designed to expand skills and abilities in the word processing field and are continually upgraded. Seminars CPOA 130 and CPOA 131 cover specific functions on various software packages. (F, Sp, Su)

CPSC 120 Introduction to Computers 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4, Writing Level 4, Math Level (See Class Schedule)
In this survey course, the student learns of the application of computers in society, considers their social and economic implications, examines questions of privacy and security, and considers recent advances in computer technology. In addition, the student is exposed to beginning instruction and practice in word processing, spreadsheet, and database applications, the programming language BASIC, and user networks. (F, Sp, Su)

CPSC 150 FORTRAN 3
Semester Prerequisite: MATH 122/MATH 126
Basic Skills Prerequisite: Math Level (See Class Schedule)
Structured programming techniques are applied in the design of algorithms and their implementation in FORTRAN. Topics included are stepwise refinement outlines, control structures, functions and subroutines, input and output procedures with text files, data types, arrays, and string processing. (F, Sp, Su)

CPSC 170 Pascal 3
Semester Prerequisite: MATH 122/MATH 126
Basic Skills Prerequisite: Math Level (See Class Schedule)
Structured programming techniques are applied in the design of algorithms and their implementation in Pascal. Topics included are stepwise refinement outlines, control structures, procedures and functions, recursion, input and output operations with text files and binary files, data types, arrays, string processing, and pointer variables. (F, Sp, Su)
CPSC 230 - DANC 104 1996-1997 Catalog Lansing Community College

CPSC 230 - Algorithms and Computing With C++
Semester Prerequisite: MATH 151
Basic Skills Prerequisite: Math Level (See Class Schedule)
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 268 - Discrete Structures in Computer Science
Semester Prerequisite: MATH 151, CPSC 150/CPSC 230
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 parsing machines. (Sp)

CPSC 270 - Assembly Language and Computer Organization
Semester Prerequisite: CPSC 200
An introduction to computer science majors to machine structure and operations using DEC/AXIS compiler. C++ is introduced. Assembly language programming and interfaces to Pascal and C++ are studied. Topics include machine representation of data and instructions, register use, and fundamental file input/output. (Sp)

CPSC 280 - Data Structures
Semester Prerequisite: CPSC 200
Advanced techniques and related theory for representation and access of information. Algorithms concerning sorting, searching, hashing, and graph representation are included. Program analysis and abstract data types including stacks, queues, and trees are also studied. (F, Su)

CPSC 290 - VAX System Support
Semester Prerequisite: Departmental Approval
An introduction to Digital VAX Computer systems. Projects to be completed will cover VAX hardware and software systems, including DCL (Digital Command Language), LMS (Library Management System), spreadsheets, text and word processing software, graphics software, and networking software. (Sp)

CPSC 295 - Independent Study in Computer Science
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes two or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

CPSC 296 - Independent Study in Computer Science
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes nine or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

CPSC 297 - Independent Study in Computer Science
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes nine or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

CPSC 298 - Independent Study in Computer Science
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes nine or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

CUMA 100 - Introduction to Credit Union Operations
Semester Prerequisite: None
This course provides students with an overview of the credit union movement, its position in the financial services industry, and basic credit union operating procedures. Directed toward staff, management, and elected officials of credit unions who wish to increase their knowledge of both the credit union movement and operations. (F)

CUMA 200 - Credit and Collections
Semester Prerequisite: None
This course covers the basics of credit and collection, including: credit evaluation, collection activities, and the legal aspects of credit union operations and lien collections. (Sp)

CUMA 201 - Credit Union Financial Counseling
Semester Prerequisite: None
This course is an overview of financial counseling techniques and skills for credit union employees. Emphasis is placed on skill-building exercises to enable students to develop a basic understanding of financial alternatives available to their customers. (Sp)

CUMA 215 - Business Law for Credit Unions
Semester Prerequisite: None
This course is an overview of business law as it relates to credit union operations. (F)

DAHH 124 - Dental Radiography
Semester Prerequisite: Dental Assistant/Dental Hygiene Semester 1 Courses
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
Lecture discusses production and emission of dental x-radiation. Indications for exposure and techniques of exposure, processing, evaluation, and interpretation of radiographs. Individualized laboratory sessions provide students practice in exposing, processing, mounting, and examining radiographs. (Sp)

DANC 100 - Introduction to Dance
Semester Prerequisite: None
This course is designed for the student with no dance experience. Students will explore the basic techniques of the core dance forms, including ballet, modern, tap, and jazz. Different aspects of dance are covered, including: dance as art, the choreographer, the dancer, the viewer, dance production, dance in education, and dance careers. (F)

DANC 101 - Beginning Ballet I
Semester Prerequisite: None
This course is designed for the student with no dance experience. Included are: basic alignment principles, ballet vocabulary and steps, and ballet techniques for the beginning ballet student. Basic barre and center floor combinations will be included. (F, Sp, Su)

DANC 102 - Beginning Modern Dance I
Semester Prerequisite: None
This course is designed for the student with no dance experience. Included are: basic alignment principles, ballet vocabulary and steps, and ballet techniques for the beginning ballet student. (F, Sp, Su)

DANC 103 - Beginning Jazz I
Semester Prerequisite: None
This course is designed for the student with no dance experience. Included are: basic alignment principles, ballet vocabulary and steps, and ballet techniques for the beginning ballet student. Basic barre and center floor combinations will be included. (F, Sp, Su)

DANC 104 - Beginning Tap I
Semester Prerequisite: None
This course is designed for the student with no dance experience. Included are: basic alignment principles, ballet vocabulary and steps, and ballet techniques for the beginning ballet student. Basic barre and center floor combinations will be included. (F, Sp, Su)
DANC 105  Jazz Beginning I  1  
Semester Prerequisite: None  
This course includes basic alignment, warm-up, and isolation in jazz dance technique for beginning dance students. Spatial relationships and rhythm are emphasized. (Su)  

DANC 106  Tap Beginning I  1  
Semester Prerequisite: None  
This course includes basic tap origins, vocabulary, steps, combinations, and rhythms for the beginning dance student. Basic alignment training techniques, spatial relationship, and elementary combinations are explored. (Su)  

DANC 110  High School Dance Workshop  3  
Semester Prerequisite: Audition Approval  
This course is designed for the talented high school student. It is an intensive course of study in basic tap, ballet, modern, and jazz. This includes basic alignment training techniques, spatial relationships, and elementary combinations. Some improvisation used to develop kinesitic, spatial, cognitive, and physical awareness. Basic performance skills are developed utilizing all dance disciplines. (Su)  

DANC 111  Beginning Ballet II  2  
Semester Prerequisite: DANC 101  
Designed for the student who has successfully completed Beginning Ballet I. This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. The student will begin to explore the aspects of building a personal movement style. (Sp, Su)  

DANC 112  Beginning Modern Dance II  2  
Semester Prerequisite: DANC 102  
This course includes a continuation of movement theory, alignment, increased training practices, spatial relationship, vocabulary, and longer combinations. Improvisation will be used to develop kinesitic, spatial, cognitive, and physical awareness. The student will begin to explore the aspects of building a personal movement style. (Sp, Su)  

DANC 113  Beginning Jazz II  2  
Semester Prerequisite: DANC 103  
This course includes a continuation of alignment, vocabulary, jazz movement theory, increased training practices, and longer combinations. A more comprehensive use of body isolations and movement rhythms will be explored. The student will begin to explore the aspects of building a personal movement style. (Sp)  

DANC 114  Beginning Tap II  2  
Semester Prerequisite: DANC 104  
Designed for the student who has successfully completed Beginning Tap I, this course includes a continuation of alignment, vocabulary, steps, combinations, and rhythms. Emphasis is placed on increased complexity in rhythms and combinations. The students will begin to explore the aspects of building a personal movement style. (Sp)  

DANC 115  Jazz Beginning II  1  
Semester Prerequisite: DANC 105  
Emphasis is placed on beginning to develop a personal style of movement in preparation for performance. Course includes a continuation of alignment, warm-up, and isolations in various rhythms and combinations. (Su)  

DANC 116  Tap Beginning II  1  
Semester Prerequisite: DANC 106  
Emphasis is placed on increased complexity in rhythms and combinations. Course includes a continuation of tap vocabulary, steps, combinations, and rhythms. (Su)  

DANC 123  Choreography  3  
Semester Prerequisite: DANC 124  
This course is designed to acquaint the student with basic choreographic techniques. Improvisation is utilized to explore ideas. Dance elements of time, space, and energy will be explored in addition to the mechanical and gestural aspects of movement. The concept of language and symbol system is studied. (Sp)  

DANC 124  Improvisation  2  
Semester Prerequisite: DANC 101/DANC 102/DANC 103  
This course is designed for the major and non-major. It provides students with opportunities to discover the skills of critical and creative thinking, as well as convergent and divergent thinking through problem-solving exercises. Spatial, kinesitic, and emotional awareness are uncovered, as well as the discovery of movement qualities. (F)  

DANC 132  Spanish Dance  2  
Semester Prerequisite: None  
This course is designed for the beginner level student. It is an introduction to the origins and techniques of Spanish dance as performed in Spain. Included are traditional music, folklore, body work, costumes, customs, and use of casetitas. (Sp)  

DANC 134  African Dance  2  
Semester Prerequisite: None  
This course is designed for the beginning II level student. It is an introduction to the origins and techniques of African dance as performed in various African countries. Included are traditional music, folklore, body work, costumes, and customs. (F, Sp)  

DANC 161  Ballet Repertory  1  
Semester Prerequisite: Departmental Approval  
This course is designed for the student who has reached a minimum of Beginning Ballet II level. The student participates in the process of auditions, rehearsals, and public performances in the ballet genre and concentrates on memorization, projection, and musicality. (Sp)  

DANC 162  Modern Dance Repertory  1  
Semester Prerequisite: Departmental Approval  
This course is designed for the student who has reached a minimum of Modern Beginning II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in the modern dance genre and concentrates on memorization, projection, and musicality. (F)  

DANC 153  Jazz Repertory  1  
Semester Prerequisite: Departmental Approval  
This course is designed for the student who has reached a minimum of Beginning Jazz II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in the jazz genre and concentrates on memorization, projection, and musicality. (F)  

DANC 164  Tap Repertory  1  
Semester Prerequisite: Departmental Approval  
This course is designed for the student who has reached a minimum of Beginning Tap II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in the tap genre and concentrates on memorization, projection, and musicality. (F)  

DANC 165  Video Dance Repertory  5  
Semester Prerequisite: Departmental Approval  
This course is designed for the student who has reached the intermediate level or above. Students learn choreography, staging, and performance, specifically designed for video production. A short-term rehearsal process culminates in a finished video performance. M a maximum of one credit in video dance can be used for degree requirements. (F, Sp, Su)  

DANC 191  Dance History  3  
Semester Prerequisite: None  
This course is a dance history overview beginning with the origins of ballet to the present. Important developments and contributions in the field of American dance education will be interwoven with the important developments and contributions of Western dance forms. (F)  

DANC 193  Dance Anatomy  3  
Semester Prerequisite: DANC 101, DANC 103  
This course is an introduction to basic anatomy as it applies to dance. Terminology, practical application, theory of movement, nutrition, and injury prevention and care will be incorporated. Emphasis will be placed on major muscles, muscle groups, and skeletal structure. (Sp)  

DANC 201  Intermediate Ballet I  3  
Semester Prerequisite: Departmental Approval  
This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, and development of a personal movement style in preparation for performance. Pointe shoes are optional. (F, Sp, Su)
DANC 202 – Intermediate Modern I 3
Semester Prerequisite: Departmental Approval
This course includes a continuation of alignment training, spatial relationships, improvisation techniques, movement theory, increased training practices, movement symbols, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities and development of a personal movement style in preparation for performance. (F, Sp, Su)

DANC 203 – Intermediate Jazz 3
Semester Prerequisite: Departmental Approval
This course includes a continuation of alignment training, movement theory, increased training practices, improvisation techniques, movement theory, increased training practices, rotations, and longer combinations. Emphasis is placed on jazz dance techniques, center floor transitional techniques and development of a personal movement style in preparation for performance. (F, Sp)

DANC 204 – Intermediate Tap 3
Semester Prerequisite: Departmental Approval
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 – Intermediate Jazz 1.5
Semester Prerequisite: Departmental Approval
Emphasis is placed on developing a personal style of movement. Course includes a continuation of alignments, warm-up, and isolations in addition to more complex rhythms and combinations. (Su)

DANC 206 – Intermediate Tap 1.5
Semester Prerequisite: Departmental Approval
Emphasis is placed on increased complexity of rhythms and combinations in order to develop a personal style in preparation for performance. (Su)

DANC 211 – Intermediate Ballet II 3
Semester Prerequisite: Departmental Approval
This course includes a continuation of the movement theory, alignment, increased training practices, vocabulary, 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. Pointe shoes optional. (F, Sp, Su)

DANC 212 – Intermediate Modern II 3
Semester Prerequisite: Departmental Approval
This course includes a continuation of Intermediate Modern I. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities, and continued development of personal movement style. Performance skills are sharpened and include projection, musicality, flow, articulation, clarity of intent, motivation, phrasing, and gesture. (F, Sp, Su)

DANC 225 – Advanced Jazz 1.5
Semester Prerequisite: Departmental Approval
Emphasis is placed on learning different styles of jazz dance appropriate to different performance needs. Course includes continuation of alignment, warm-up, and isolations in addition to more complex rhythms and combinations. (Su)

DANC 244 – Pointe Technique Beginning 2
Semester Prerequisite: DANC 111/Higher Level Course
This course is designed for the intermediate level and above ballet students. Pointe technique continues the development of strength, flexibility, coordination, and balance. Emphasis is placed on elementary pointe technique exercises to strengthen ankles, calves, legs, and lower back for pointe work. (F, Sp)

DANC 280 – Dance Teaching Assistantship 2
Semester Prerequisite: Departmental Approval
This course is designed for the beginning teacher. Under the guidance of a faculty member the student will learn to implement the use of goals, objectives, and strategies in class preparation by co-teaching a beginning level course. (F, Sp)

DANC 283 – Dance Teaching Practicum 2
Semester Prerequisite: Departmental Approval
This course is designed to enable the student to teach a dance course at the beginning level in the student’s primary discipline under the guidance of an instructor. Implementation of objectives and strategies will enable the student to prepare a fully articulated course. (Sp)

DANC 295 – Directed Studies I 1
Semester Prerequisite: Departmental Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (F, Sp, Su)

DANC 296 – Directed Studies II 2
Semester Prerequisite: Departmental Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (F, Sp)

DANC 295 – Directed Studies III 3
Semester Prerequisite: Departmental Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (F, Sp)

DAST 110 – Dental Instruments 2
Semester Prerequisite: Admission to Program
Lecture and practical experience will introduce the student to dental instruments and equipment for tray set-ups and the use and maintenance of these items for dental procedures. (F)

DAST 111 – Preclinical Techniques – DA 3
Semester Prerequisite: DAST 110, DAST 114
Through lecture and simulated clinical experience the student will be introduced to dental procedures, four-handed chairside assisting, charting, management of clinical records, and taking and recording vital signs. (F)

DAST 112 – Dental Anatomy 5
Semester Prerequisite: Admission to Program
Study of nomenclature, morphologic characteristics, and physiologic relationships of human primary and permanent teeth. Head and neck anatomy and the histologic and embryologic development is included with a review of basic oral pathology for the dental assistant. Laboratory activities develop observation and dexterity skills while studying this information. (F)

DAST 114 – Preventive Dentistry and Procedures 3
Semester Prerequisite: Admission to Program
An introduction to the dental operatory, specific techniques, and oral hygiene procedures for preventing dental diseases. Dental emergency prevention, protocol, care, and OSHA regulations are reviewed. (F, Sp)

DAST 115 – Dental Materials 3
Semester Prerequisite: Admission to Program
Lecture and laboratory sessions address the properties, selection, manipulation, and evaluation of materials used in dentistry. Practice is provided in the preparation, manipulation, and delivery of the materials most often handled by the dental assistant. (F)

DAST 118 – Dental Assisting Principles 1
Semester Prerequisite: Admission to Program
Various aspects of the dental profession are discussed to prepare the student for dental assistant for entry to the health team. Subjects include dental law, ethics, liability, health profession organizations, employment, and current health care issues. (F)

DAST 120 – Clinical Dental Assisting I 9
Semester Prerequisite: Semester I Courses
A study of the clinical practice of four-handed chairside assisting with emphasis on general restorative and dental specialty procedures. Sessions correlate clinical procedures and practice with private practice and field experience participation. (Sp)

DAST 126 – Registered Dental Assistant Procedures for the Dental Assistant 4
Semester Prerequisite: Semester I Courses
A study of the intra-oral functions delegated to the licensed Registered Dental Assistant in the State of Michigan. Laboratory time is provided for the student to learn the techniques and gain proficiency in these procedures that will be performed during clinic rotations. (Sp)

DAST 130 – Clinical Dental Assisting II 3
Semester Prerequisite: DAST 120, DAST 125, DAST 124
Lecture sessions teach basic communication, psychology, and effective dental office management skills for dental assistants. Students practice these skills during laboratory simulations. Field experience assignments provide on-site practice and integration of dental assisting skills: specialty, ADA, and assist skills. (Sp)
DHYG 110 Oral Health Practices
Semester Prerequisite: Admission to Program
Basic Skills Prerequisite: Math Level 2 or Effective Beginning Spring 1997
Introduction to the dental operator, aseptic techniques, caries and periodontal disease processes, and oral hygiene and fluoride procedures for preventing dental diseases; Small group laboratory instruction allows the student to learn through investigation, involvement, and application. Each student will become successful in maintaining his or her own good oral health. (F)

DHYG 111 Preclinical Techniques - DH
Semester Prerequisite: Admission to Program
Introduction to selection and application of prophylaxis instruments, collection and assessment of patient data, and performing oral examinations. Small group clinic instruction includes implementation of procedures on student partners. (F)

DHYG 112 Tooth Morphology
Semester Prerequisite: Admission to Program
Study of nervous system, dental morphology, characteristics and physiologic relationships of human primary and permanent teeth. Laboratory activities develop observation and dexterity skills while studying tooth morphology and visible anatomic structures relative to dental hygiene clinical procedures. (F)

DHYG 113 Head and Neck Anatomy
Semester Prerequisite: Admission to Program
A descriptive anatomical study of the head and neck regions, including skeletal, nervous, circulatory, lymphatic, and muscular systems and their relationship to clinical procedures. (F)

DHYG 114 Oral Histology, Embryology, and Pathology
Semester Prerequisite: Admission to Program
Study of the embryology and microscopic anatomy of the oral cavity, with emphasis on the developmental growth process. Diseases affecting these tissues, including the principles of inflammation, repair, developmental disturbances, stains and accretions; diseases of the teeth and supporting structures, oral infections, injuries, and neoplasms are included. (F)

DHYG 116 Dental Emergency Procedures
Semester Prerequisite: Admission to Program
Students study dental emergencies (recognition, prevention, and effective care). Experience is provided in monitoring vital signs and handling emergency situations. CPR certification is earned. (F)

DHYG 118 Dental Hygiene Principles
Semester Prerequisite: Admission to Program
The student receives an overview of dental history, basic dental law, the dental health team, professional organizations, professionalism, and a code of ethics. (F)

DHYG 120 Clinical Dental Hygiene I
Semester Prerequisite: Semester II Courses
Initial clinical practice of basic dental hygiene services: recognition and recording of oral conditions, medical history, oral health education, prophylaxis, fluoride treatment, sterilization, radiography, and desk procedures. (Sp)

DHYG 121 Dental Hygiene Practice
Semester Prerequisite: Semester I Courses
A continuation of didactic information and basic skills that will enhance performance of procedures in a clinical setting. Emphasis is on treatment planning, patient home care, periodontal examination, cavity detection, instrument sharpening, and clinical photography. Small group lab instruction provides application of didactic information in a simulated clinical setting. (Sp)

DHYG 122 Dental Pharmacology-Dental Hygiene
Semester Prerequisite: Semester I Courses
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. (Sp)

DHYG 126 Principles of Periodontics
Semester Prerequisite: Semester I Courses
Study of anatomy, physiology, and pathology 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 dental hygienist's role as co-therapist in private practice. (Sp)

DHYG 128 Dental Materials and Methods
Semester Prerequisite: Semester I Courses
Study of terminology, selection, manipulation, and evaluation of materials used in dentistry. Activities emphasize procedures and materials used by the dental hygienist and the knowledge needed to educate the patient regarding the benefit of certain restorative procedures. (Sp)

DHYG 210 Clinical Dental Hygiene II
Semester Prerequisite: Semester II Courses
Continuation of clinic, performing comprehensive treatment planning and advanced prophylaxis techniques (deep scaling, root planing, nutritional counseling, ultrasonic instrumentation, periodontal charting, nutritional counseling, and applying chemotherapeutic agents). Course coordinates the periodontal case study, advanced patient care and management, and review of clinical case studies. (F)

DHYG 212 Advanced Dental Hygiene Procedures
Semester Prerequisite: Semester II Courses
Study of advanced clinical dental hygiene procedures with emphasis on the dental hygienist's role as co-therapist in private practice. (Sp)

DHYG 214 Clinical Oral Pathology
Semester Prerequisite: Semester II Courses
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)

DHYG 215 Special Patient Care
Semester Prerequisite: Semester II Courses
Students develop a philosophy for the management and oral health care of the handicapped: people with physical, mental, social/emotional, and selected medical conditions, as well as the elderly or medically compromised. (F)

DHYG 216 Periodontal Therapies
Semester Prerequisite: Semester II Courses
Principles of periodontics are applied to treatment modalities. The dental hygienist co-therapist role in the prevention, identification, and treatment of periodontal disease is applied. Students complete a periodontal case study to demonstrate appropriate implementation of their periodontal knowledge and therapy skills. (F)

DHYG 218 Nutrition and Oral Health
Semester Prerequisite: Semester II Courses
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 nutrient needs; providing nutritional counseling and diet information to special needs patients, and the relationship of nutrition to oral health is emphasized. (F)

DHYG 219 Dental Public Health and Education
Semester Prerequisite: Semester II Courses
Students will review scientific literature, dental epidemiology, principles of public health, and health care delivery systems. Further study will include human behavior, teaching methodologies, interpersonal relations, and communication skills relating to patient education, motivation, and acceptance of health care. (F)

DHYG 220 Clinical Dental Hygiene III
Semester Prerequisite: Semester III Courses
Clinical practice is continued with emphasis on performing comprehensive dental hygiene care, making decisions, solving problems, and managing time as dental hygienist in private practice. (Sp)

DHYG 222 Dental Specialties
Semester Prerequisite: Semester III Courses
Lectures and individualized instruction include: (1) dental specialties, reviewing procedures and practices, and (2) the dental hygienist's role in recognizing specialty care needed while educating the patient regarding his or her needs. Students observe specialty procedures in dental specialty offices. (Sp)
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DHYG 224  Ethics and Jurisprudence  2
Semester Prerequisite: Semester III Courses
An introduction to ethical reasoning and personal property for interviewing techniques, employment opportunities. Insurance protection, current education law, and professional ethics of dental hygiene and dentistry are presented. (Sp)

DHYG 225  Testing Styles and Inventory  2
Semester Prerequisite: Departmental Approval
An introduction to dental hygiene interview testing techniques, test construction, and score 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)

DHYG 229  Community Oral Health  2
Semester Prerequisite: Semester III Courses
Students implement a program plan for a community project utilizing assessment, planning, implementation, and evaluation processes. Each student will participate in field experience assignments in a variety of community health settings. (Sp)

DHYG 230  Registered Dental Assistant Procedures for the Dental Hygienist  2
Semester Prerequisite: Departmental Approval
A specially designed course for dental hygiene students wishing to learn ancillary dental hygiene procedures and those infrastructural functions delegated only to the registered dental assistant in the State of Michigan. Instruction is emphasized in the laboratory setting to prepare the student for practical applications of these procedures. (Sp)

DTDS 100  Basic Drafting  3
Semester Prerequisite: None
This course focuses on basic concepts in orthographic projection, including the study of both orthographic and perspective projections. The course is designed to help students become familiar with the fundamentals of drafting techniques. Students will complete different studies to demonstrate understanding of the concepts presented. (F, Sp, Su)

DTDS 101  Drafting I  4
Semester Prerequisite: DTDS 100 Placement
Basic Skills Prerequisite: Reading Level 4; Writing Level 3; Math Level 1
This is an introductory course in drafting concepts. Instruction includes learning orthographic projection, auxiliary views, sections, dimensioning, and secondary auxiliary views. Students will complete a series of drawings to demonstrate understanding of the concepts presented. (F, Sp, Su)

DTDS 102  Drafting II  1
Semester Prerequisite: DTDS 101
This course covers advanced drafting and drafting techniques needed to present auxiliary views from various orthographic views. Layout and design concepts will also be stressed. Students will complete practical design projects in problem solving and creatively applicable to the automotive, industrial, and aerospace industries. (F, Sp, Su)

DTDS 103  Geometric Tolerancing  2
Semester Prerequisite: DTDS 101 Concurrently
This course covers the principles and methods of dimensioning and tolerancing for specific design requirements on engineering drawings. Uniform practices for stating and interpreting these requirements will be stressed. Content includes use and understanding of the symbology and numerical specification of tolerances being applied using ASME/ANSI M14.9 1994 standards. (F, Sp)

DTDS 104  Descriptive Geometry  4
Semester Prerequisite: DTDS 103
This course covers the theory and the practice of advanced orthographic projection. Content includes points, lines, planes, parallelism, perpendicularity, etc. Students will complete practical projects related to architectural, civil, and industrial engineering situations. (F, Sp)

DTDS 110  Industrial Blueprint Reading  3
Semester Prerequisite: DTDS 103
This course covers basic concepts in orthographic projection with emphasis on interpretation of engineering drawings. Areas also covered include measurement systems, technical sketching, dimensioning, sectional and auxiliary views, and tolerancing. (F, Sp, Su)

DTDS 111  Industrial Blueprint Reading Workshop  1.25
Semester Prerequisite: None
This course covers basic concepts in orthographic projection with emphasis on interpretation of engineering drawings. (F, Sp, Su)

DTDS 131  AutoCAD Basic 2-D  4
Semester Prerequisite: CNCP 100/TECH 130 Concurrently DTDS 101
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 layers, block, plot commands, and isometric views will also be covered in this course. (F, Sp, Su)

DTDS 132  AutoCAD Advanced  4
Semester Prerequisite: DTDS 131
This course builds on the material covered in DTDS 131. More complex drawings will be assigned, in addition to learning how to use AutoCAD's layers, blocks, plot commands, and isometric views. Students will learn how to customize AutoCAD to the user's needs. (F, Sp, Su)

DTDS 190  Unigraphics I  4
Semester Prerequisite: DTDS 101
This is the first of a three-sequence course sequence that covers the fundamentals of Unigraphics System of interactive design. This course covers Comprehensive CAD concepts of 2-D and 3-D construction and solid modeling, as well as some of the concepts of drafting. (F, Sp, Su)

DTDS 191  Unigraphics II  4
Semester Prerequisite: DTDS 190, DTDS 102 Concurrently
This is the second course of a three-semester course sequence. The course covers the construction of solid parts with assemblies and components constructed using primitives, extrusion, and bodies of revolution as well as surfaces. The solid models constructed will be dimensioned and plotted as drawings in class. (F, Sp, Su)

DTDS 192  Unigraphics III  4
Semester Prerequisite: DTDS 102, DTDS 103, DTDS 181 Concurrently
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 creation of dimensioned and toleranced engineering drawings of those components. Advanced concepts of Unigraphics modeling will be discussed and utilized in class projects. (F, Sp, Su)

DTDS 202  Die Design and Construction  4
Semester Prerequisite: DTDS 101
This course will emphasize the proper steps in designing a die, the ability to read sheet metal die design layouts, tolerancing, and clearance 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
Semester Prerequisite: DTDS 101
Detailing techniques and dimensioning will be emphasized through the development of working drawings. These drawings will be extracted from a design concept or assembly type drawing. Familiarization with standard components will 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
Semester Prerequisite: Instructor 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 3-D and Solids  4
Semester Prerequisite: DTDS 131
Students will learn how to use the 3-D and solid modeling features of AutoCAD Product design drawings will be used to develop skills. Students will learn how to construct a 3-D and solid model library of parts. (F, Sp, Su)

DTDS 280  Drafting Project Lab  4
Semester Prerequisite: Approval Required
This course is intended to give the advanced drafting and design student an opportunity for more experience through mutual agreement between student and instructor. Students will complete advanced projects and research in a variety of design application situations. (F, Sp, Su)
DTOS 265 CAD Project Lab 2
Semester Prerequisite: Approval Required
This course is intended to give advanced drafting and design students an opportunity, through mutual agreement between student and instructor, to complete projects on one of several available CAD systems. (F, Sp, Su)

ECON 120 Power, Authority, and Exchange 4
Semester Prerequisite: None
A comparative study of primitive social economies and modern political systems. An emphasis will be placed on the evolution of economic organization in human society. (F, Sp, Su)

ECON 130 Honors: Power, Authority, and Exchange 4
Semester Prerequisite: Departmental Approval
A comparative study of primitive social economies and modern political systems. An emphasis will be placed on the evolution of economic organization in human society. This course is the same as ECON 120 except that it is taught as a seminar for honors students only. (F, Sp, Su)

ECON 140 Current Economic Issues 3
Semester Prerequisite: None
An introductory course focusing on economic problems and issues within the American economy. It provides an overview of economic analysis. Topics are related to an overall look at the economic system, government policy, prices and their application, money, income, and national income accounts of the United States. (F, Sp, Su)

ECON 201 Principles of Economics - Micro 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4, Writing Level 3, Math Level 3 (See Class Schedule)
This course is designed to develop objective consideration of economic issues and provide a foundation for understanding of how resources are allocated by prices. Topics for study include price theory, consumer demand, cost and market structure, the role of government in the market, resource pricing, and international trade. (F, Sp, Su)

ECON 202 Principles of Economics - Macro 3
Semester Prerequisite: ECON 201/Departmental Approval
Basic Skills Prerequisite: Math Level 3 (See Class Schedule)
This course addresses the theory of national income, employment and the price level, and government fiscal and monetary policies designed to influence aggregate economic activity. It also addresses exchange rates, international financial relationships, and economic growth. (F, Sp, Su)

ECON 213 Economic/Business History of the U.S. 3
Semester Prerequisite: None
This course provides a survey of American economic and business history, change, and growth since the colonial period. Topics include an overview of business organization, the role of government and technological change, American industrial development, labor unions, and capitalization patterns. (F, Sp, Su)

ECON 221 International Economics 3
Semester Prerequisite: ECON 202/Instructor Approval
This course examines, from both historical and theoretical perspectives, the benefits of international trade, tariffs, quotas, and other restrictions on international trade: free trade areas and common markets; international capital movements, the balance of payments, alternative exchange rate systems, and exchange rate manipulation. (Sp)

EDUC 201 Education Practicum I 2
Semester Prerequisite: None
Beginning practical experience and training in the field for individual students. The student is placed with an educational institution. (F, Sp, Su)

EDUC 220 Introduction to Education 3
Semester Prerequisite: None
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. Also included are the use of audio visual materials, school records, safety, discipline, dramatic play, and storytelling. (F, Sp, Su)

ELCT 100 Schematic Drawing 1
Semester Prerequisite: None
A non-mathematical beginning course in electronics covering electronic component recognition, reading schematics, free hand and computer drawing of schematic diagrams, and relating schematic diagrams to electronic circuits. The student will etch and drill a printed circuit board of a circuit that will be assembled during the soldering class. (F, Sp, Su)

ELCT 101 Analog Problems 4
Semester Prerequisite: High School Algebra
Basic Skills Prerequisite: Reading Level 6, Writing Level 3, Math Level 2 Effective Beginning Spring 1997 (See Class Schedule)
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 105 Solar Electrical Systems 5
Semester Prerequisite: None
An introductory course in producing and storing electricity generated by sunlight. Topics include photovoltaics, batteries, charge controllers, inverters, efficient electrical appliances, and solar installations. (Su)

ELCT 109 DC Circuits 3
Semester Prerequisite: ELCT 101 Concurrently/Approval
An introductory course covering the basics of direct current. Course work is divided into theory and lab work. (F, Sp, Su)

ELCT 110 AC Circuits 3
Semester Prerequisite: ELCT 101, ELCT 109 Concurrently/Approval
An introductory course covering the basics of alternating current. Course work is divided into theory and lab work. (F, Sp, Su)

ELCT 112 Transistors 5
Semester Prerequisite: ELCT 110/ELCT 111, ELCT 101/Approval
A lecture and laboratory course dealing with diodes in power supply and regulator circuits, bipolar and field effect transistor biasing, and single and multi-stage amplifier circuits. Circuits are covered from the analysis, design, and troubleshooting standpoints. (F, Sp)

ELCT 120 Programming Preparation 2
Semester Prerequisite: None
The student will learn software that provides preparation for machine or high-level language programming. Software used is DOS, a text editor, and a flowcharting program. Emphasis is placed on developing flowcharts for electronics-related problems that can be programmed on a computer. (F, Sp, Su)

ELCT 121 BASIC for Electronics 3
Semester Prerequisite: ELCT 110/ELCT 111, ELCT 120
The student will write and execute programs in the BASIC language for electronic circuit analysis. Program problems will range from simple series circuits to transistor amplifiers. A student-designed programming project is used as part of the lab evaluation. (F, Sp, Su)

ELCT 130 Machine Language Programming 2
Semester Prerequisite: ELCT 110/ELCT 111, ELCT 120
Covers the fundamentals of machine language programming for the M6800/MPU computer. Math instruction set, addressing modes, branching, stack operations, subroutines, interrupts, and programming of PIA. Laboratory work includes writing programs in machine language. (F, Sp, Su)

ELCT 131 Digital Basics 2
Semester Prerequisite: ELCT 110/ELCT 111
Introduces digital electronics: basic gates, combinational logic, K-maps, and functions of combinational logic such as decoders and code converters. It also introduces sequential logic latch, flip-flops, timers, counters, and shift registers. Laboratory work includes the analysis, construction, and troubleshooting of small digital circuits and circuits constructed for ELCT 251 class using TTL ICs. (F, Sp, Su)
ELCT 151 - ELCT 272

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ELCT 151  Computer Troubleshooting I  3
Semester Prerequisite: ELCT 171 Concurrently
This is a troubleshooting and repair course intended for students in the Computer Repair Certificate program. Course topics include basic troubleshooting techniques, unit and board swap, computer troubleshooting, disk drive maintenance, and computer preventive maintenance. (Sp)

ELCT 160  Logic Problems Analysis I  3
Semester Prerequisite: None
A fundamentals analysis course intended for students in the computer repair certificate program. Course topics include manipulation of formulas used in electronics, basic gate operation and truth tables, Boolean algebra, binary, octal and hexadecimal base number systems. (F)

ELCT 161  Soldering/Desoldering  1
Semester Prerequisite: None
A basic soldering course. Course topics include soldering electronic components to printed circuit boards, cable construction and surface mount soldering. Desoldering components using solder wick, vacuum desoldering tools and equipment, and printed circuit board repair. (F, Sp, Su)

ELCT 170  Computer Repair Electronics I  6
Semester Prerequisite: ELCT 180 Concurrently/Approval
A basic electronics course intended for students in the computer repair program. This course begins with basic electricity concepts and continues with topics through transistor circuits and basic digital electronics. (F)

ELCT 171  Computer Repair Electronics II  6
Semester Prerequisite: ELCT 170
A digital electronics and computer systems course intended for students in the Computer Repair Certificate program. Course topics include semiconductor and magnetic memory, computer system memory, microprocessors, peripheral adapters, and microcomputer systems. (Sp)

ELCT 180  Computer Test Equipment I  3
Semester Prerequisite: ELCT 170 Concurrently/Approval
A basic test equipment course intended for students in the Computer Repair Certificate program. This course introduces the student to the operation of electronic test equipment including VOM, DMM, oscilloscopes, storage oscilloscopes, and basic digital test equipment. (F)

ELCT 181  Computer Test Equipment II  2
Semester Prerequisite: ELCT 180, ELCT 171 Concurrently
An advanced test equipment course intended for students in the Computer Repair Certificate program. Course topics include software diagnostic routines, signature and data analysis, and computer troubleshooting equipment. (Sp)

ELCT 200  CET Exam Preparation  2
Semester Prerequisite: ELCT 112
This course is designed to prepare the student to take the Certified Electronic Technician, associate level, examination. (Su)

ELCT 205  Project Lab  1
Semester Prerequisite: ELCT 112 Approval
A guided independent study of a topic of interest within the area of electronics. The student will write a research paper or construct an electronic device that has the prior approval of a faculty member. (F, Sp, Su)

ELCT 207  Project Lab  2
Semester Prerequisite: ELCT 112 Approval
A guided independent study of a topic of interest within the area of electronics. The student will write a research paper or construct an electronic device that has the prior approval of a faculty member. (Sp, Su)

ELCT 211  Linear Circuits I  4
Semester Prerequisite: ELCT 112
Solid state devices such as the JFET, MOSFET, and op-amps are studied. Applications of op-amps and comparators are examined using active filters, summing and differential amplifiers, window comparators, and DC motor control circuits. (F)

ELCT 212  Linear Circuits II  4
Semester Prerequisite: ELCT 211
Linear devices such as PLL, VCO, waveform generators and voltage regulator circuits are studied. A unit on printed circuit board design is included. The student will design a printed circuit layout and construct a bipolar power supply. (Sp)

ELCT 230  Advanced Microprocessor  5
Semester Prerequisite: ELCT 112, ELCT 121, ELCT 130
Covers advanced topics in microprocessor: 8086MPU instruction set, addressing modes, interrupt structure, memory map of PC under DOS, BIOS, MS DOS functions, parallel I/O, keyboard, mouse and monitor driver routines. Lab work involves writing external and resident interactive programs under DOS and interfacing to RS232, D/A, and A/D converters. (F)

ELCT 231  Advanced Digital Electronics  5
Semester Prerequisite: ELCT 112, ELCT 121, ELCT 131
Covers advanced topics in digital electronics: adders, comparators, code converters, ALUs, non-sequential and shift register counters, display systems, and solid-state memories. It also covers SPICE, PISO, SIGNATURE, D/A, and A/D circuits. Laboratory work includes the analysis, design, construction and troubleshooting of digital circuits using SSI, MSI, and LSIs. (F)

ELCT 232  Digital Project  3
Semester Prerequisite: ELCT 130, ELCT 231
This course deals with the design of a microcomputer-based programmable monitoring and control system designed around the MC68HC11 and the use of an emulator to verify the design. Laboratory work includes a microcomputer-based design project, preferably using the MC68HC11 with a keyboard, LED/LCD display, and sensors. (Sp)

ELCT 241  Analog Troubleshooting  1
Semester Prerequisite: ELCT 112
Basic troubleshooting principles will be applied to diode, bipolar, and field effect transistor circuits. Laboratory work will be based on computer simulated troubleshooting exercises. (F)

ELCT 242  Computer Interfacing and Peripherals  5
Semester Prerequisite: ELCT 230, ELCT 231
Covers 8086MPU pins functions, address decoding, interfacing of static memory, dynamic memory, and I/O adapters. Principle of operation and interfacing of keyboard, display, printer, floppy disk, modem, LAN, and motor control hardware. Lab work involves constructing hardware and writing software for most of the peripherals discussed in the course. (Sp)

ELCT 251  Digital Troubleshooting I  1
Semester Prerequisite: ELCT 112, ELCT 131
This is a half semester lab course designed to give the student hands-on experience in troubleshooting digital circuits involving combinational logic, multiplexers, decoders, display and display drivers, flip-flops, counters, timing circuits, shift registers, and other digital circuitry. Class demonstrations and videotapes are used for instruction. (F)

ELCT 252  Digital Troubleshooting II  3
Semester Prerequisite: ELCT 230, ELCT 231, ELCT 251
This course is a systematic approach to troubleshooting microprocessor-based systems and using test equipment. The student gains hands-on experience by drawing timing diagrams, troubleshooting flowcharts, writing or using diagnostic programs, and using test equipment to locate faults on MPU, memory, video, I/O, and floppy disk controller boards. (Sp)

ELCT 261  Consumer Product Systems  3
Semester Prerequisite: ELCT 112
Common electronic consumer product operation is explained through block diagrams and schematic diagrams. Systems include AM and FM stereo radio, black-and-white and color television, and videotape recorders. Lab work will involve measurements and alignments of normally operating systems. (Sp)

ELCT 271  Communications I  4
Semester Prerequisite: ELCT 112 Approval
This course covers a review of resonant circuits, LC filter networks, radio frequency amplifiers, oscillators, amplitude modulation transmitting and receiving circuits, and systems. (F)

ELCT 272  Communications II  4
Semester Prerequisite: ELCT 271 Approval
The student will learn frequency modulation transmitting and receiving circuits and systems, transmission lines, antennas, and microwave devices. (Sp)
ELCT 281 Biomedical Instrumentation 4
Semester Prerequisite: ELCT 112
Preparation for the certified biomedical electronics technician examination begins here. The student will be introduced to biomedical safety standards and regulatory agencies as well as measurement of physiological signals with biomedical equipment. Lab exercises include safety testing and performance testing of biomedical equipment. (F)

ELCT 290 Biomedical Internship 3
Semester Prerequisite: ELCT 261/Approval
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)

ELTE 100 Electrical Safety Practices 1
Semester Prerequisite: None
This course covers basic electrical safety practices in the home, in the electrical laboratory, and in construction and industry. Included are state and federal standards and practices. This course is a prerequisite for or to be taken concurrently with all ELTE courses that have a lab. (F, Sp, Su)

ELTE 110 Practical Electricity 3
Semester Prerequisite: ELTE 100/Concurrently
Basic Skills Prerequisite: Reading Level 2, Writing Level 2; Math Level will be Effective Beginning Spring 1997 (see Class Schedule)
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, investigate the behavior of meters and transformers, and review electrical codes and standards. (F, Sp, Su)

ELTE 112 Basic Wiring Installation 2
Semester Prerequisite: ELTE 110
This course covers installation of a variety of wiring systems in wood frame and masonry construction. Students will practice installing non-metallic sheathed cable, flexible metal conduit, electrical metallic tubing, and rigid conduit. (F, Sp)

ELTE 121 Analyzing Electric Circuits 5
Semester Prerequisite: MATH 650, ELTE 110/Approval
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (see Class Schedule)
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 and parallel combination DC and AC circuits, inductance, and capacitance. (F, Sp)

ELTE 122 Industrial Control Electronics 5
Semester Prerequisite: ELTE 110, ELTE 121, INAU 100/Approval
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
Semester Prerequisite: ELTE 121
This course begins with three-phase circuits, including three-phase power measurement. Contains practical introduction to single- and three-phase transformers, motors, and alternators. Brief coverage of DC machines. (F)

ELTE 131 Introduction to Machine Control 4
Semester Prerequisite: ELTE 110
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
Semester Prerequisite: ELTE 110/Equivalent
An introductory course designed for individuals with little or no knowledge of the electrical code. Students will study the structure and scope of the National Electrical Code, learn how to locate often used code sections, Ohm's law, voltage drop, wire and conduit sizing, and installation methods. (F, Sp)

ELTE 142 National Electrical Code II 4
Semester Prerequisite: ELTE 141/ELTE 145/Approval
This course is for individuals with field experience and basic electrical training who need a review for the State Master's exam. Students will review the Code with focus on locating and interpreting the National Electrical Code. In addition to the N.E.C., State of Michigan electrical rules will be reviewed. (F, Sp)

ELTE 143 National Electrical Code III 4
Semester Prerequisite: ELTE 142/Departmental Approval
For individuals with a journeyman'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, state of Michigan electrical and construction code rules, and discuss topics appropriate to the Electrical Contractors exam. (F)

ELTE 145 Electrical Prints for Buildings 4
Semester Prerequisite: ELTE 110/Approval
Covers construction prints emphasizing standardized and non standardized symbols and interpretation of prints. Uses the National Electrical Code to calculate branch circuit power, feeder, motor circuit, and service size. Other topics include uninterruptible power supplies, signaling, and safety systems. (Sp)

ELTE 147 National Electric Code Changes 1
Semester Prerequisite: ELTE 141/Equivalent
Covers the changes to the National Electrical Code and state codes in the most recent code cycle. (F, Sp, Su)

ELTE 150 Electric Motor Maintenance 2
Semester Prerequisite: ELTE 110
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 232 Industrial Control Design 3
Semester Prerequisite: ELTE 131
This course is a continuation of ELTE 131, covering more components and larger more complex machine control diagrams, including automation interlocking and automatic continuous cycling of machinery. Students will be taught to design control circuits for more complex machines in conformance with industry standards. (F)

ELTE 240 Electrical Estimating 3
Semester Prerequisite: ELTE 112, ELTE 145/Approval
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, evaluation techniques, and specifications. Students should have wiring experience, practice in the use of NEC rules, and electrical prints before enrolling. (F)

ELTE 260 Introduction to Programmable Logic Controllers 4
Semester Prerequisite: ELTE 131
This course covers Programmable Logic Controllers with focus on common overall programming concepts. Topics include the capabilities, similarities and differences among controllers, programming (exam will test), timers, counters, and connecting external devices to Allen Bradley, Modicon, and Omron. (F, Sp)

ELTE 261 Allen-Bradley PLC-5 Advanced 6
Semester Prerequisite: ELTE 260
This course covers programming and connections for Allen-Bradley PLC-5 controllers. Focus on math, subroutines, file, block transfer, sequence, 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)

EMSA 100 First Aid and CPR 2
Semester Prerequisite: None
Designed to provide the knowledge and skills necessary to respond to and treat emergency situations until professional medical help is obtained. First Aid and CPR certificates issued upon successful completion. (F, Sp, Su)

EMSA 110 EMT Refresher 3
Semester Prerequisite: Basic EMT
This course will provide the EMT with the opportunity to assist the State of Michigan refresher requirements. Content includes CPR, oxygen therapy, airway management, patient assessment, medical and environmental emergencies, backpacking, bandaging, shock, trauma, childhood, and pediatric. Successful completion of this course requires passing written and practical exams. (F, Sp)
EMSA 221 Critical Incident Stress Debriefing

Semester Prerequisite: EMS Personnel
This seminar provides the knowledge and skills required to function as a member of a CISD that assists patients with preventing, recognizing, mitigating, and recovering from stressful emergent situations. It is required for emergency related personnel, mental health workers, and clergy interested in becoming a team member. (F, Sp, Su)

EMSA 223 Pre-Hospital Care of the Injured Child

Semester Prerequisite: EMS Personnel
A course based on the educational program developed by the Children's Hospital National Medical Center, Washington, D.C. The course focuses on the pre-hospital management of the acutely ill or injured child or infant. Advance study is required for successful completion of this course. (F, Sp, Su)

EMSA 224 BTLS-Basic Trauma Life Support

Semester Prerequisite: EMS Personnel
A course which provides instruction and intensive evaluation of current theory and skills used in the pre-hospital management of the trauma victim. Advance study is required for successful completion of this course. Follows national BTLS curriculum. (F, Sp, Su)

EMSA 225 Paramedic Continuing Education

Semester Prerequisite: EMS Personnel
This course is a series of continuing education topics designed to meet all of the CE points required by the State of Michigan for re-certification of a paramedic. EMS and EMT Specialists may attend designated sessions. (Sp)

EMSB 101 CPR for Bystanders/HeartSaver

Semester Prerequisite: None
This seminar is designed for CPR instruction of the general public and adheres to American Heart Association guidelines. Content includes adult one-person CPR and foreign body airway obstruction. Also includes information about heart disease, risk factors, prudent heart living, and heart and lungs physiology. (F, Sp, Su)

EMSA 102 CPR for Health Care Professionals

Semester Prerequisite: Health Professional
This seminar is designed for CPR instruction of health care providers and adheres to American Heart Association guidelines. Content includes one- and two-rescuer CPR, child and pediatric CPR, adult child, pediatric foreign body airway obstruction, information about heart disease, risk factors, and physiology of the heart and lungs. (F, Sp, Su)

EMSA 103 CPR Recertification

Semester Prerequisite: Current Provider 'C' Card
This seminar is designed for CPR instruction of individuals who have previously obtained instruction in the basics of cardiovascular resuscitation and foreign body airway obstruction. The participants must have a current provider card for CPR. The curriculum and testing consists of recertification techniques for CPR. (F, Sp, Su)

EMSA 104 CPR Instructor

Semester Prerequisite: Basic Cardiac Life Support, Current Provider 'C' Card
The CPR Instructor's seminar is to provide the opportunity and forum to acquire knowledge and skills to accurately instruct and test the Basic Life Support Provider's courses according to American Heart Association guidelines. (F, Sp, Su)

EMSA 106 Infant/Child CPR

Semester Prerequisite: None
This seminar provides instruction of CPR for special situations or groups. Infant and child CPR and foreign body airway obstruction for babysitters and parents would fall under this curriculum. (F, Sp, Su)

EMSA 110 First Aid and CPR Seminar

Semester Prerequisite: None
This seminar offers adult CPR including airway obstruction and four hours of basic first aid. Red Cross certification is given to those successfully completing both components. (F, Sp, Su)

EMSA 121 EMS Continuing Education A

Semester Prerequisite: EMS Personnel
A series of continuing education seminars for the basic EMT, EMT-Intermediate, and paramedic designed to meet three or four continuing education credits for relicensure requirements of the State of Michigan. Students may elect to take as many seminars as needed to fulfill their relicensure requirements. (F, Sp, Su)

EMTA 100 Medical First Responder

Semester Prerequisite: None
A course to provide the student with the knowledge and skills necessary to manage ill or injured victims at the scene of an emergency until the arrival of ambulance personnel. Successful completion enables the student to apply for state licensure as a medical first responder. (F, Sp, Su)

EMTA 101 Basic EMT I

Semester Prerequisite: EMTA 102 Concurrently
Basic Skills Prerequisite: Reading Level 5, Writing Level 4
First in a sequence of four 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

Semester Prerequisite: EMTA 101 Concurrently
Second in a sequence of four 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

Semester Prerequisite: EMTA 101, EMTA 102
The third in a sequence of four 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. (F, Sp, Su)

EMTA 104 Basic EMT IV

Semester Prerequisite: EMTA 103 Concurrently
The final course in a sequence of four to prepare the student as a basic EMT. Emphasis is placed on the overall delivery of basic emergency care through simulated emergencies. Successful completion of the course and the clinical component enables the student to apply for licensing as a basic EMT. (F, Sp, Su)

EMTA 105 Ambulance Driving

Semester Prerequisite: EMT/EMT Student
A course to provide the EMT with the knowledge and practical experience in the operation of an ambulance. The course will focus on safety, defensive driving techniques, and specialized driving maneuvers. (F, Sp)

EMTA 108 Legal Issues in Emergency Medical Services

Semester Prerequisite: EMT/EMT Student
A course to assist the EMT in understanding the legal system and legal principles as 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

Semester Prerequisite: EMTA 101, EMTA 104 Concurrently
This is the clinical/clinical component in the two-semester Basic EMT program. The student will be assigned to hospital clinical sites with an instructor. Observation on campus and EMS agencies with a licensed EMT or paramedic. (Sp)

EMTA 114 Rescue, Extrication, and Dangerous Situations

Semester Prerequisite: EMT/EMT Student
A course to provide the student with the knowledge and skills necessary for licensure as an EMT specialist. Emphasis is placed on intravenous therapy, advanced airway skills, and patient assessment skills. Successful completion requires passing written and practical exams in the supervised clinical component. (Sp)

EMTA 200 EMT Specialist

Semester Prerequisite: Basic EMT
A course to provide the basic EMT with knowledge and skills necessary for licensure as an EMT specialist. Emphasis is placed on intravenous therapy, advanced airway skills, and patient assessment skills. Successful completion requires passing written and practical exams in the supervised clinical component. (Sp)

EMTA 222 EMS Instructor Coordinator

Semester Prerequisite: 3 Years EMS Experience
A Michigan Department of Public Health approved course for those interested in becoming an instructor coordinator. Includes teaching and testing methods, lesson plan development, writing performance objectives, course administration, MDPH application for course approval, and meeting state requirements. Student teaching required. (F)
EMTA 223 Advanced EMS I: Critical Care EMS
Semester Prerequisite: Departmental Approval
Prepares the student to become a critical care transport specialist and perform new expanded scope of practice skills. Topics include ventilators, 12-lead ECGs, IV pumps, pharmacology, invasive lines, and complications of transport. Successful completion requires passing written and practical exams plus the supervised clinical component. (F)

EMTA 224 Advanced EMS II: Hospital Paramedic
Semester Prerequisite: Departmental Approval
This course will prepare the paramedic to work in a hospital or walk-in clinic environment. Hospital procedures, pharmacology, documentation, and assessment will be covered. Successful completion requires passing written and practical exams plus the supervised clinical component. (Su)

EMTA 225 Medical Hazardous Material
Semester Prerequisite: Departmental Approval
An advanced course in EMS designed to provide the skills and understanding necessary for paramedics to safely manage Haz Mat exposed patients. Key topics include: safety, scene operations, hazard identification, patient assessment, treatment including specialized pharmacology, and transport. (Sp)

EMTA 226 Emergency Medical Services Management
Semester Prerequisite: EMS Personnel
This course is designed to provide the student with knowledge and understanding of current EMS management issues. The course will explore the EMS specific aspects of human resources, administration, operations, finance, clinical management, medical control authority, system design, and public relations. (F)

ENGL 122 Writing about Literature and Ideas
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
An alternative to WRIT 122. ENGL 122 introduces the students to various literary forms and develops analytical skills in reading, writing, and research techniques. Writing assignments begin with short essays and conclude with an extensive literary research paper. (F, Sp, Su)

ENGL 132 Honors Writing about Literature and Ideas
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 5
An alternative to WRIT 122. ENGL 122 is an introduction to various literary forms, in addition to the development of analytical reading and writing skills and research techniques leading to a literary research paper. (Same as ENGL 122 but taught on an advanced level.) (Sp)

ENGL 201 Introduction to Poetry
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
An introduction to the content, form, style, and techniques of poetry. Its structural types, aesthetic, biographical, and thematic types, are studied, and their effects or purposes. The course emphasizes poetry written in English but includes English translations of representative poetry from other languages and cultures. (Su)

ENGL 202 Introduction to Drama
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Introduces drama and its literary techniques and conventions. Attention is given to theory, and understanding of the plays is emphasized. Representative plays from Greek, European, English, and American dramatists. (Sp)

ENGL 203 Introduction to Prose
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
This course traces the development of prose fiction by introducing the students to the epic prose tradition, the romance, the novel, and the short story. It requires the student to use critical thinking in analyzing various examples of prose fiction and provides historical and cultural context for the works studied. (Su)

ENGL 211 World Literature I
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
A selective survey of the literatures of major world cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe to approximately the 17th century. Explores the historical, aesthetic, political, economic, and thematic elements of their respective cultures through narrative prose fiction, poetry, and drama. (F)

ENGL 212 World Literature II
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
A 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, aesthetic, political, economic, and thematic elements of their respective cultures through narrative prose fiction, poetry, and drama. (Sp)

ENGL 220 Science Fiction
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
This course acquaints students with popular, modern literature of science fiction. History and definitions of science fiction are given, but the emphasis is on short stories, novels, and films—their questions and criticisms of society, the world, and human existence. (F)

ENGL 240 The Film as Art
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
This course will introduce film as an art form capable of making perceptive comments on our civilization. Thematic analysis of 12 to 16 motion pictures of recognized merit will emphasize the filmmaker's visual and aural techniques as well as conventions more commonly associated with literature. (F, Sp, Su)

ENGL 245 Popular Culture and Mass Media
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
A study of the popular culture distributed by mass media (newspapers, radio, film, television, magazines, and music videos) and how the media and popular culture reflect and shape our cultural beliefs. Extensive use of multimedia. (F)

ENGL 255 American Literature I
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Provides a perspective on the evolution of traditional American literature beginning with the writings of the first European explorers and Native American oral tradition. Features selected essays, autobiographical writings, poems, fiction, and plays from the mid-19th century to 1865, including the work of women and ethnic minorities, which have contributed to American thought. (F, Sp)

ENGL 256 American Literature II
Semester Prerequisite: ENGL 255
Provides a perspective on the further development of traditional American literature from 1865 (the Realism period) to contemporary literature. Features selected essays, autobiographical writings, poems, fiction, and plays from the end of the Civil War to the literature of the late 20th century, including the work of women and ethnic minorities, which have profoundly shaped American literature. (F, Sp)

ENGL 260 African American Literature
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
This course is an introduction to the African American literary tradition, which explores how black men and women have portrayed African American life and their experiences in autobiography, essay, fiction, poetry, and drama. Students will read and discuss slave narratives, literature from the Harlem Renaissance, and several modern texts. (Sp)

ENGL 265 Japanese Literature
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Arranged chronologically, this course draws heavily on many different genres of Japanese literature. The basis for selection of works to be read rests on the insight that each work gives to the Japanese society which produced it, and upon its universal characteristics. (Sp)

ENGL 266 British Literature I
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
British Literature I surveys the poetry, prose, and drama of the major British writers from Chaucer (14th century) to Pope (18th century). The works are selected to reflect the attitude and values of British culture and the perception of the world from a British point of view. (F)

ENGL 267 British Literature II
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
British Literature II surveys the poetry, prose, and drama of the major British writers from 18th century to late 20th century. The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (Sp)
ENGL 270 – ESLT 014

ENGL 270 Literature by Women
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
A study of selected works by English and North American women writers. Designed to increase understanding of the themes, images, issues, and modes of expression of women writers. (Su)

ENGL 290 Shakespeare
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Introductory course in the dramatic works of William Shakespeare. Students will read nine to 12 plays representative of the author's comedies, histories, and tragedies. (F)

ENGL 295 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

ENGL 296 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

ENRI 005 Academic Preparation Laboratory
Semester Prerequisite: None
Arranges the days and times when students will attend enrichment lab. Students must register for both an enrichment lab course, such as ENRI 109, and a section of ENRI 005. (F, Sp, Su)

ENRI 098 Success Workshop
Semester Prerequisite: None
Mini-workshop intended to introduce and/or review reading-related techniques essential for academic survival and success. Sessions cover time management, establishing frame of reference, scientific writing, main ideas identification, organized study procedures, enhancing comprehension, note-taking through "mapping," and key improving objective test scores. Includes much practical, hands-on activity. (F, Sp)

ENRI 101 Individualized English I
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing, reading, vocabulary, pronunciation, and listening. Students may select standard English grammar, organizational strategies, or pronunciation. Students and instructors select instructional materials and design an individualized study program. May repeat for credit three times. (F, Sp, Su)

ENRI 102 Individualized English II
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing, reading, vocabulary, pronunciation, and listening. Students may select standard English grammar, organizational strategies, or pronunciation. Students and instructors select instructional materials and design an individualized study program. May repeat for credit three times. (F, Sp, Su)

ENRI 103 Individualized English III
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing, reading, vocabulary, pronunciation, and listening. Students may select standard English grammar, organizational strategies, or pronunciation. Students and instructors select instructional materials and design an individualized study program. May repeat for credit three times. (F, Sp, Su)

ENRI 105 Life Learning Portfolio
Semester Prerequisite: Departmental Approval
This course provides the opportunity for students to create a portfolio that will document learning acquired through work, volunteer, and/or life experience. The finished portfolio can then be submitted to the LCC Registrar's Office to request college credit for knowledge and skill—learning outcomes—that correspond to LCC courses. (F, Sp)

ENRI 109 Academic Preparation I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4 Writing Level 3
Offers a unified and collaborative approach to learning basic language skills. Emphasizes reading, writing, speaking, listening, and thinking skills. Students assist one another in exploring topics of their choice from various academic disciplines. First of two academic preparation courses. Requires enrollment in ENRI 005. (F, Sp, Su)

ENRI 152 Orientation Workshop: College Reading Survival Skills
Semester Prerequisite: None
Designed for beginning college students, whether recent high school graduates or returning adults. Devotes 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 Orientation Workshop: College Writing Skills
Semester Prerequisite: None
This course is designed for new and returning students, as well as others from the community. It helps students to develop their writing skills, including the study of writing for various disciplines, the writing process, and the basics of grammar, sentence style, and punctuation. (Su)

ESLA 106 English as a Second Language: Beginning
Semester Prerequisite: Placement Test Departmental Approval
For advanced beginning ESL students who have been introduced to some basic English structures but have not yet mastered them. Class sessions focus on the spoken form and homework on the written form. (F, Sp, Su)

ESLA 108 English as a Second Language: Intermediate
Semester Prerequisite: Placement Test Departmental Approval
For intermediate ESL students. Reinforces the instruction of basic English and introduces more advanced grammatical structures. Emphasizes writing and reading. (F, Sp, Su)

ESLA 110 English as a Second Language: Advanced
Semester Prerequisite: Placement Test Departmental Approval
For advanced ESL students. Emphasizes grammar and pronunciation. (F, Sp, Su)

ESLT 011 Grammar and Writing I
Semester Prerequisite: Placement Test Departmental Approval
This course is for beginning-level non-native speakers of English. Students are introduced to the basics of English grammar and practice simple sentences, commands, and requests. Students focus on developing their skills through a variety of language exercises, including short writings of up to a paragraph length. (F, Sp, Su)

ESLT 012 Grammar and Writing II
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide non-native speakers of English with practice in the basics of English grammar through a variety of contextualized language exercises. Students will practice a wide range of grammatical forms, as well as situationally appropriate language use. Students will strengthen their writing skills at the sentence and paragraph levels. (F, Sp, Su)

ESLT 013 Grammar and Writing III
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide non-native speakers of English with practice in the basics of English grammar through a variety of contextualized language exercises. Students will practice a wide range of grammatical forms, as well as situationally appropriate language use. Students will strengthen their writing skills at the sentence and paragraph levels. (F, Sp, Su)

ESLT 014 Grammar and Writing IV
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide advanced non-native speakers of English with the opportunity to identify their weaknesses in using English grammar and mechanics and develop a systematic study plan for understanding those weaknesses and correcting them. Students will improve their writing skills, including those related to the essay. (F, Sp, Su)
ESLT 021 Speaking/Listening I 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to teach American English pronunciation and conversational patterns to non-native speakers of English. Students will practice speaking and listening comprehension skills. (F, Sp, Su)

ESLT 022 Speaking/Listening II 3
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide intensive practice in pronunciation and conversational English. Lessons are designed to reinforce English grammatical structures, increase students' intelligibility and listening comprehension, and develop fluency in spoken English. (F, Sp, Su)

ESLT 023 Speaking/Listening III 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to give non-native speakers of English intensive practice in conversation skills and listening comprehension. Students will review American English pronunciation, stress and intonation patterns, and practice a variety of oral communication skills, including interviewing, rehearsal oral presentations, and extemporaneous speech. (F, Sp, Su)

ESLT 024 Speaking/Listening IV 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide advanced non-native speakers of English with practice in spontaneous and formal conversation skills. Students will practice listening skills, interviewing, problem-solving, and oral presentations. (F, Sp, Su)

ESLT 031 Reading I 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to teach basic reading skills to non-native speakers of English. Classroom exercises focus on vocabulary development and the ability to decide and report on the assigned readings. (F, Sp, Su)

ESLT 032 Reading II 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to help non-native speakers of English develop their general reading skills and increase their vocabulary level. Students will learn to identify main ideas, understand English idioms, and increase their reading speed while maintaining comprehension. (F, Sp, Su)

ESLT 033 Reading III 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to give non-native speakers of English practice in reading scientific and technical texts. Assignments will focus on the development of technical vocabulary, identification of main ideas and important details, and summarizing information from textbooks. (F, Sp, Su)

ESLT 034 Reading IV 4
Semester Prerequisite: Placement Test Departmental Approval
This course is designed for non-native speakers of English who need more practice in reading before they enter regular college courses. Course work will include reading college-level texts, vocabulary building, familiarization with idioms, reading summaries, and paraphrasing main ideas. (F, Sp, Su)

ESLT 050 Language Lab 4
Semester Prerequisite: Departmental Approval
This course is designed to provide non-native speakers of English with extensive, individualized programs of listening and pronunciation improvement. A student's laboratory work will be designed to reinforce his or her work in other ESL classes and correlated to his or her English proficiency. (May repeat for credit time) (F, Sp, Su)

FIRE 101 Michigan F.F.T.C. Basic Fire Training Level I A and B 9
Semester Prerequisite: Admission to Program
Basic Skills Prerequisite: Math Level II will be Effective Beginning Spring 1997 (See Class Schedule)
Level I is basic training required for all fire fighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes the basics of fire suppression, apparatus operation, life safety, and physical fitness. (F, Sp, Su)

FIRE 102 Michigan F.F.T.C. Basic Fire Training Level II C and D 4
Semester Prerequisite: FIRE 101
Level II is basic training required for all career fire fighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes advanced fire suppression, aerial operation, life safety, and physical fitness. (F, Sp, Su)

FIRE 110 Fire Prevention and Law 3
Semester Prerequisite: None
This course identifies applicable statutes of Michigan law as they relate to the Fire Service. Covers selected portions of NFPA 101, the Life Safety Code, and appropriate portions of BOCA, and other building codes. Focuses on the importance of an aggressive fire prevention plan in communities. (F)

FIRE 115 Building Construction for the Fire Service 4
Semester Prerequisite: None
This course involves the essentials of building design and construction for the fire service with emphasis on life safety, evacuation, fire extension, and collapse. (F)

FIRE 120 Chemistry of Hazardous Materials 3
Semester Prerequisite: None
A college-level chemistry course focusing on hazardous materials encountered by fire fighters. Contains specific elements of NFPA 741, 742, and OSHA CFR 1910.120. Topics include atomic and molecular theory, bonding properties of elements, oxidation and reduction reactions, kinetics, molecular theory, and solutions and electrochemistry. Includes Michigan Haz-Mat First Responder Certification. (F)

FIRE 125 Fire Protection Systems and Equipment 1
Semester Prerequisite: None
Identifies fixed systems typically encountered by fire fighters responding to industrial, commercial, or hazardous environments. Topics include detection and alarm (NFPA 72-85), sprinklers and standpipes (NFPA 13 and 1964), and special systems and design. (F)

FIRE 130 Hydraulics and Pump Operations 4
Semester Prerequisite: TEC 100/MATH 050
Basic Skills Prerequisite: Math Level I will be Effective Beginning Spring 1997 (See Class Schedule)
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 1962. (Sp)

FIRE 150 Fire Command and Operations 4
Semester Prerequisite: None
This course centers on the initial fireground attack from a company officer's perspective. Details separately with engine and truck company operations including initial assignments, use of resources, rescue, streams, and salvage. Covers selected portions of NFPA 1002, 1410, 1904, and 1961. Covers the National Fire Academy Incident Command System. (Sp)

FIRE 210 Fire Investigation 4
Semester Prerequisite: FIRE 101/Fire Fighter/Sworn Police Officer
This course investigates fire behavior, importance of determining cause and origin, accidental, incendiary, or arson type fires. Describes methods of recognizing and identifying motivation for arson and covers applicable laws and court procedures. (Sp)

FIRE 220 Hazardous Materials in the Fire Service 4
Semester Prerequisite: FIRE 120
Explores the concepts and methods of detection, control, and mitigation of hazardous materials incidents. Contains specific elements of NFPA 741, 742, and OSHA CFR 1910.120. Includes Michigan Haz-Mat Operations Level Certification. (Sp)

FIRE 250 Fire Administration 4
Semester Prerequisite: Fire Command/Departmental Approval
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)

FREN 115 Conversational French I 3
Semester Prerequisite: None
Students learn how to communicate orally in everyday life situations and in travel abroad. Emphasis is on the development of ability to communicate in French. French culture is explored. (F, Sp, Su)

FREN 116 Conversational French II 3
Semester Prerequisite: FREN 115/Equivalent
Continuation of FREN 115. Designed for advanced beginners who wish to improve their speaking ability in the context of daily living. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation through class discussions conducted in French. Students will continue to explore different aspects of life and culture in the francophone world. (F, Sp, Su)
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FREN 121 - Elementary French I
Semester Prerequisite: None
Introductory course open to students with little or no knowledge of French. Students are introduced to basic patterns and structures of French, enabling them to develop listening, speaking, reading, and writing skills. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation. (F, Sp, Su)

FREN 122 - Elementary French II
Semester Prerequisite: FREN 101/FREN 121/Equivalent/Approval
Second course of a two-semester sequence. Introduction to more complex structures and patterns, and more active use of spoken and written French. (Sp)

FREN 201 - Intermediate French I
Semester Prerequisite: FREN 102/FREN 123/Equivalent/Approval
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
Semester Prerequisite: FREN 201/Equivalent/Approval
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 120 - Introduction to Geography
Semester Prerequisite: None
An introductory course designed to provide contemporary geographic ideas and techniques to study the interaction between people and their physical environment. (F)

GEOG 121 - Physical Geography
Semester Prerequisite: None
Emphasizes landforms, natural vegetation, weather and climate elements, and soils. Offers an extensive study of these forces, noting their ecological principles and their effects on human life. Includes mapping techniques, land-use analysis, and air-photo interpretation. Field trips will be an integral part of the course. (F, Sp, Su)

GEOG 200 - World Regional Geography
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 2
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
Semester Prerequisite: None
A study of the human and physical aspects of North America. This course will identify some of the factors that influence the quality of life and give character to each of the various sub-regions. (Sp)

GEOG 203 - Economic Geography
Semester Prerequisite: None
The study of the distribution of economic activities throughout the world. Emphasizes agriculture, resources, population, industry, urbanization, and trade. (Sp)

GEOG 295 - One Credit Independent Study in Geography
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project, chosen by the student, must be approved in advance by the department chair and be supervised by a faculty member. It must also meet specific academic goals. (F, Sp, Su)

GEOG 296 - Two-Credit Independent Study in Geography
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project, chosen by the student, must be approved in advance by the department chair and be supervised by a faculty member. It must also meet specific academic goals. (F, Sp, Su)

GEOG 297 - Three-Credit Independent Study in Geography
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project, chosen by the student, must be approved in advance by the department chair and be supervised by a faculty member. It must also meet specific academic goals. (F, Sp, Su)

GEOG 298 - Michigan Geology
Semester Prerequisite: Science Inventory Recommended
Evidence from the rock and fossil record is used to reconstruct the sequence of events and changing environmental conditions of Michigan's past. Michigan's geo-logic resources (e.g., petroleum, natural gas, coal, iron, copper, salt, gypsum, surface groundwater, sand/gravel) and environmental issues (e.g., waste disposal, water pollution) are investigated. (Su)

GEOG 299 - Geology of Western National Parks
Semester Prerequisite: None
This course is a survey of the geological features, surface processes, and history of the western national parks and monuments. The geology of these sites is presented within the context of geologically defined regions and their sequence of origin. Emphasis is placed on video and slide presentations accompanying lecture. (Su)

GEOG 210 - Geology Field Studies
Semester Prerequisite: Geology Course/Geology Course Concurrently
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gypsum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.) (Su)

GEOG 211 - Geology Field Studies
Semester Prerequisite: Departmental Approval
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gypsum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.) (Su)

GEOG 214 - Geology Field Studies
Semester Prerequisite: Departmental Approval
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gypsum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.) (Su)

GEOG 221 - Earth Materials and Processes: Physical Geology
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: Math Level (See Class Schedule)
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, plate tectonics exercises. (F)

GEOG 222 - Earth and Life Through Time: Historical Geology
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
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 record, reconstruction of past ecosystems, geologic maps, and plate tectonic influence on the environment. (Sp)

GEOG 230 - Environmental Geology
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: Math Level (See Class Schedule)
Concepts of physical geography are applied to human interaction with the environment. Geologic resources (e.g., minerals, energy, water) and hazards (e.g., earthquakes, landslides, flooding) are explored. Laboratory includes rock and mineral identification, map reading and interpretation, evaluation of land use alternatives, and problem-solving activities related to environmental issues. (Sp)
GERO 100 Introduction to Human Aging 3
Semester Prerequisite: None
This course provides a basic orientation to the field of gerontology, with emphasis on social aspects: demography, physiology, psychology, sociology, economics, environment, death and dying, and community and government programs. (F)

GERO 101 Programs and Services for the Aging 3
Semester Prerequisite: GERO 100 Recommended
This course provides a description of the organization and functions of the aging services network, its relationship to the broader human services system, and how the services worker can use or develop community resources for the benefit of older adults. (Spi)

GERO 110 Self-Renewal in Later Years .5
Semester Prerequisite: None
In this course, mature adult students clarify personal values, identify accomplishments and interests, and develop communication skills. Topics include myths about aging, use of personal resources (emotional, physical, mental, and social), and exploration of meaningful roles for older adults. Content is designed for persons in middle and later years. (F, Sp)

GERO 112 Planning for Retirement 1.5
Semester Prerequisite: None
This course covers financial matters, legal affairs, physical and mental health, being alone, housing choices, employment, and volunteer opportunities, community resources, and meaningful use of time. It includes discussion of planning and decision-making skills and development of a personalized plan for retirement. (F, Sp)

GERO 115 Memory Improvement Techniques for Older Adults .25
Semester Prerequisite: None
This course is designed for older adults who wish to improve their ability to remember. It examines myths and facts about memory and aging, reviews factors which influence memory, and introduces specific techniques for improving recall. (F, Sp)

GERO 119 The Aging Process: Facts, Myths, Changes, and Resources .25
Semester Prerequisite: None
This course includes an overview of facts and myths associated with older adults, including normal physical changes and their implications, social- emotional aspects of aging, including communication issues, and federal, state, and local resources for the older adult. (F, Sp)

GERO 121 Senior Group Program Planning .25
Semester Prerequisite: None
This course provides an overview for planning senior adult programs: basic principles of programs and leadership, ideas and resources for activities for older adults, motivating older adults to participate, and scheduling activities. (F, Sp)

GERO 125 Volunteers: Recruiting, Retaining, Rewarding .25
Semester Prerequisite: None
This course describes the basic processes of volunteer management: techniques for assessing current and future volunteer utilization and innovative methods for recruitment, retention, and recognition of volunteers. It provides an applied focus to assist supervisors and managers as they recruit and work with volunteers. (F, Sp)

GERO 126 Volunteers: Interviewing and Placement .25
Semester Prerequisite: None
This course focuses on volunteer management processes of interviewing and placement, including conducting an effective interview, legal restrictions to the interview process, appropriate placement of volunteers, and termination or reassignment. (F, Sp)

GERO 129 Maintaining Client/Volunteer Records .25
Semester Prerequisite: None
This course presents an overview of guidelines that can be used in maintaining client/volunteer records, including decisions regarding appropriate information to record, confidentiality, clients' rights of access, and applications to human service settings. It addresses needs of people working in agencies in which they need to devise their own record keeping forms. (F, Sp)

GERO 131 Planning for Older Adults with Developmental Disabilities .5
Semester Prerequisite: None
This course presents an overview of the older adult with developmental disabilities including characteristics, demographics, public policy issues, and functional assessment. Michigan program initiatives are discussed; case studies are presented. (F, Sp)

GERO 132 Activities: Older Adults with Developmental Disabilities .5
Semester Prerequisite: None
This course provides an overview of planning principles and processes effective in designing meaningful activities for older adults with developmental disorders. Practice opportunities are included. (F, Sp)

GERO 141 Gerontological Practices: Case Assessment and Intervention .25
Semester Prerequisite: None
This course presents an overview of the case management pathway in providing direct services to individual older adults by providing safety factors, proper life, and proper treatment. It includes a focus on issues that have added impact on the older person and techniques that are effective in case management for that population. (F, Sp)

GERO 158 Long-Term Care Options .25
Semester Prerequisite: None
This course presents an overview of long-term care options from home care and retirement centers to adult foster care and nursing homes. Appropriate placement, financial aspects, and quality care issues are discussed. (F, Sp)

GERO 161 Issues of Aging: Sexuality .25
Semester Prerequisite: None
This course presents a review of issues relating to sexuality and older persons: societal attitudes, sexual behavior patterns, physiological changes, psychological responses, and special situations, such as institutional settings. (F, Sp)

GERO 164 Medication and Alcohol Use Among Older Adults .25
Semester Prerequisite: None
This course examines medication and alcohol use among older adults including prescription and non-prescription 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 .25
Semester Prerequisite: None
This course is an introduction to current concepts of dementia (Alzheimer's disease and related disorders) in older persons. It provides an overview of social, 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 166 Housing Options and Issues for Older Adults .25
Semester Prerequisite: None
This course presents an overview of housing issues and options for the older adult, including financial and legal implications. (F, Sp)

GERO 167 Nursing Home Issues: Choices, Realities, Alternatives .25
Semester Prerequisite: None
This course provides an overview of current nursing home issues, including the role of nursing homes in the continuum of care, issues and concerns relating to care, funding of care, review of resident's rights, guidelines for choosing a home, and guidelines for visiting nursing home residents. (F, Sp)

GERO 169 Legal Rights of Older Adults: Disability and Consent .25
Semester 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: Recognition and Treatment .25
Semester Prerequisite: None
This course provides an examination of depression in later life. Symptoms, causes, "masks," diagnosis, and assessment of depression are introduced, including information on distinctions between depression and dementia. Basic techniques and guidelines for working with depressed older persons are presented. (F, Sp)

GERO 171 Techniques for Caring for Persons with Dementia .75
Semester Prerequisite: None
This course provides an introduction to techniques for working with older adults with Alzheimer's disease and related disorders. The psychosocial needs of individuals and their families are a primary focus. Communication techniques, programming approaches, handling problem behaviors, a task breakdown approach, environmental adaptations, and role of the family are discussed. (F, Sp)
GERO 173 Activities: Older Adults with Alzheimer's/Related Disorders 1.5
Semester Prerequisite: None
This course provides an overview of planning principles and processes effective in designing meaningful activities for older adults with Alzheimer's disease and related disorders. Practice opportunities are included. (F, Sp)

GERO 179 Healthcare Insurance Programs and Supplemental Policies: Aged 25
Semester Prerequisite: None
This course provides an overview of Medicare and Medicaid programs, including recent and proposed changes at the federal and state level; information on supplemental health and long-term care insurance coverage is included. (F, Sp)

GERO 202 Mental Health and Aging 2
Semester Prerequisite: GERO 100 Recommended
This course presents skills and adaptations for maintaining good mental health in late life. It explores family and social factors; personality, stress and loss, assessment, treatment, and care of older persons with mental disorders; and response of the mental health system and aging services network. It includes communication skills for interacting with older adults. (Sp)

GERO 204 Aging and Health 2
Semester Prerequisite: GERO 100 Recommended
This course examines aging and health from an applied perspective for the human services provider, including implications of normal/ pathological changes in body systems and strategies used in working with health systems on behalf of older adults. Emphasis is on the assessment and maintenance of function, and benefits of lifelong health promotion. (F)

GERO 282 Gerontology Field Placement I 4
Semester Prerequisite: Departmental Approval
This course combines classroom training with field placement (10 hours per week) at a community agency or institution serving older persons. Students apply learning about structure, funding, and organization of aging services; explore community resources; demonstrate appropriate work habits; assess their attitudes and career skills in gerontology, and relate current aging research to practice. (F)

GERO 284 Gerontology Field Placement II 4
Semester Prerequisite: GERO 282, Departmental Approval
This course provides advanced field placement experience at a community agency or institution serving older persons (10 hours per week), combined with classroom training in practice concepts related to service delivery to older persons. Students learn 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 203 MicroStation Beginning 3
Semester Prerequisite: LAND 262/Departmental Approval
This entry-level, computer-aided design and drafting course uses MicroStation software on an Integrate workstation or PC. Students will create 2D drawings using basic graphic tools and procedures. (F, Sp)

GRET 204 MicroStation Graphic Environment 3
Semester Prerequisite: GRET 203
This course explores the MicroStation graphic environment using the Integrate 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, Su)

GRET 205 Principles of Geographic Information Systems 3
Semester 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 206 Advanced Techniques in GIS 3
Semester Prerequisite: GRET 204
This course expands upon the techniques, methods, and processes involved in developing a full GIS program. Different GIS software packages will be explored, as well as related databases and completed projects. (F, Sp, Su)

GRET 209 Applications in Geographic Information Systems 3
Semester Prerequisite: GRET 205, GRET 206
This course specifically deals with all of the possible application areas for GIS, both present and future. Applications such as mine, agriculture, mining, military, 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. (F, Sp)

GRET 211 GIS Mapping Systems 3
Semester Prerequisite: None
This course covers the basics of computer mapping systems and how they relate to computer design, graphics and GIS. C-Map, Map Info, Atlas Map, 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 3
Semester Prerequisite: GRET 203
This course is a continuation of the basic MicroStation course and deals with 3-D and other advanced aspects of this computer-aided drafting and design package. (F, Sp, Su)

GRET 214 G.R.A.S.S. Beginning 3
Semester Prerequisite: GRET 205
This computer-based course will explore the Geographical Resource Analysis Support System (G.R.A.S.S.) software package developed by the U.S. Army Corp. of Engineers. The specific functions of the software will be explored as it relates to the world of Geographic Information Systems. (F, Su)

GRET 216 Introduction to MicroStation 2
Semester Prerequisite: None
This is a course to introduce the student to the basics of MicroStation. MicroStation supports a range of commands for placing and manipulating elements in the design file. A student completes either a MicroStation personal computer setup or the INFORMIX-SQL/OD Base II plus database packages. The course is designed for Integrate Workstation lab use, as well as the MicroStation PC. (F, Sp, Su)

GRET 218 GIS Design Systems 5
Semester Prerequisite: None
Database design entails identification of relevant data sources, applying cartographic standards, and managing a tabular database scheme that will relate to cartographic layers in the GIS. Tools and techniques for data identification and composition are presented in the context of an example design for a municipal GIS, with emphasis on geodetic reference frame, base map, and cadastral overlay. (F, Sp, Su)

GRET 219 Data Sets for GIS 5
Semester Prerequisite: None
This course focuses on available commercial and public domain data sets for GIS. These data sets are completely described and documented according to cartographic characteristics and attribute. GIS systems are provided to participants for their exploration of data sets. Applications developed using the data sets are demonstrated. (F, Sp, Su)

GRET 220 Hydrological Systems 3
Semester 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, Sp, Su)

GRET 221 Landforms and Soil Systems in GIS 3
Semester Prerequisite: None
This course will discuss the important classifications of landforms 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. (F, Sp, Su)

GRET 223 Environmental Resource Management 3
Semester Prerequisite: None
This course will cover the broad spectrum of environmental resources such as forestry, agriculture, mining, soils, vegetation, and their impact and management in current computer information systems. Resources in the land planning disciplines will be highlighted as to their function in the present environmental processes, both public and private. (F, Sp, Su)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRET 240</td>
<td>Basic Map Orientation and Construction</td>
<td>3</td>
<td>None</td>
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<tr>
<td></td>
<td><strong>Semester Prerequisite:</strong> None</td>
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<tr>
<td></td>
<td>The basic principles, functions, and origins of maps will be discussed. The student will construct various types of maps. Computer-aided map planning and design along with how to read, print, and design maps will also be covered. (F, Sp, Su)</td>
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<tr>
<td>GRE 241</td>
<td>Air Photo Interpretation</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> GRET 240 or Departmental Approval</td>
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<tr>
<td></td>
<td>This course will include the development of skills necessary for basic interpretation of aerial photography data, how it is collected, and the ability to analyze maps created from the data collected in this method. The current technology and GIS relationship will be highlighted. (F, Sp, Su)</td>
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<tr>
<td>GRET 243</td>
<td>ORACLE Beginning</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> None</td>
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<td></td>
<td>This course will explore the database software package ORACLE. The introduction to databases for the beginner followed by a step-by-step approach to ORACLE. This is a hands-on computer course. (F, Sp, Su)</td>
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<tr>
<td>GRET 244</td>
<td>Beginning UNIX: GIS Environment</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> None</td>
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<td>This is a beginning course which acts as an introduction to the UNIX operating system. UNIX System V, the AT&amp;T offered release, will be the version covered in this course. UNIX as it relates to operating systems in the GIS environment will be highlighted. This is a hands-on computer exercise course. (F, Sp, Su)</td>
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<tr>
<td>GRET 248</td>
<td>GIS Analysis Systems</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> GRET 204</td>
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<td></td>
<td>MicroStation Analyst (MGA) is an advanced software package dealing with GIS MGA, which generates topologically-structured files from design files for use in performing spatial analysis. It will also cover system query sets and answers to questions posed to topological files. (F, Sp, Su)</td>
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<tr>
<td>GRET 254</td>
<td>Orientation to ARC/INFO</td>
<td>1.5</td>
<td><strong>Semester Prerequisite:</strong> LAND 292 or Departmental Approval</td>
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<tr>
<td></td>
<td>This course is an introduction to the use of the ARC/INFO software. ARC/INFO is a leading product used in the design of Geographic Information Systems. Basic product use and modeling will be demonstrated. There will be hands-on experience in the lab. (F, Sp, Su)</td>
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<tr>
<td>GRET 255</td>
<td>Beginning ARC/INFO</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> LAND 282 or Departmental Approval</td>
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<tr>
<td></td>
<td>This course will be an introduction to the use of the ARC/INFO software. ARC/INFO is a leading product used in the design of Geographic Information Systems. Basic product use and modeling will be demonstrated. There will be hands-on experience in the lab. (F, Sp, Su)</td>
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<tr>
<td>GRET 256</td>
<td>GRET Independent Study</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> Instructor Approval</td>
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<td></td>
<td>The independent study is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)</td>
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<tr>
<td>GRET 296</td>
<td>GRET Project Lab</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> Instructor Approval</td>
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<tr>
<td></td>
<td>This project lab is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)</td>
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<tr>
<td>GRET 297</td>
<td>GRET Project Lab</td>
<td>2</td>
<td><strong>Semester Prerequisite:</strong> Instructor Approval</td>
</tr>
<tr>
<td></td>
<td>This project lab is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design is required. (F, Sp, Su)</td>
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<tr>
<td>GRMN 115</td>
<td>Conversational German I</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> None</td>
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<td></td>
<td>The first course in a two-semester sequence for people 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)</td>
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<tr>
<td>GRMN 116</td>
<td>Conversational German II</td>
<td>3</td>
<td><strong>Semester Prerequisite:</strong> GRMN 115 or Equivalent</td>
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<td>The second course in a two-semester sequence for people 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)</td>
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<tr>
<td>GRMN 121</td>
<td>Elementary German I</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> None</td>
</tr>
<tr>
<td></td>
<td>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)</td>
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<tr>
<td>GRMN 122</td>
<td>Elementary German II</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> GRMN 101 or GRMN 121 or Equivalent</td>
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<td></td>
<td>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)</td>
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<tr>
<td>GRMN 201</td>
<td>Intermediate German I</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> GRMN 102 or GRMN 122 or Equivalent</td>
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<tr>
<td></td>
<td>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)</td>
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<tr>
<td>GRMN 202</td>
<td>Intermediate German II</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> GRMN 201 or Equivalent</td>
</tr>
<tr>
<td></td>
<td>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)</td>
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<tr>
<td>HIST 150</td>
<td>African American History</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> None</td>
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<tr>
<td></td>
<td>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)</td>
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<tr>
<td>HIST 210</td>
<td>Studies in American History</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> Instructor Approval</td>
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<td>Covers problems of research, writing, and philosophy and interpretation of history, involving a detailed examination of a particular area of American history. (Sp)</td>
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<tr>
<td>HIST 211</td>
<td>U.S. History to 1877</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> 2.0 Minimum in WRIT 121</td>
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<td></td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 6</td>
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<td>A history of the United States from colonial beginnings through reconstruction. (F, Sp, Su)</td>
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<tr>
<td>HIST 212</td>
<td>U.S. History: 1877 to the Present</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> 2.0 Minimum in WRIT 121</td>
</tr>
<tr>
<td></td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 6</td>
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<td></td>
<td>A history of the United States from the end of reconstruction to the present. (F, Sp, Su)</td>
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<tr>
<td>HIST 214</td>
<td>African History</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> WRIT 121 or WRIT 122 or Recommended</td>
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<tr>
<td></td>
<td>Surveys African history with emphasis on pre-colonial and colonial Africa; nationalism and the struggle for independence; colonialism and economic development; underdevelopment, and cultures and traditions as factors in development. Covers some of these topics in three other countries of the Third World, e.g. Brazil, Pakistan, and Indonesia. (F)</td>
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<tr>
<td>HIST 220</td>
<td>Michigan History</td>
<td>4</td>
<td><strong>Semester Prerequisite:</strong> WRIT 121 or WRIT 122 or Recommended</td>
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<tr>
<td></td>
<td>A survey of the political, economic, and social development of Michigan from pre-colonial times to the present. (F)</td>
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</tbody>
</table>
HIST 230 British History 4
Semester Prerequisite: WRIT 121 (ENGLWRIT 122 Recommended)
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 250 Conflict and Revolution in Southern Africa 4
Semester Prerequisite: WRIT 121 (ENGLWRIT 122 Recommended)
Study of historical-cultural origins and contexts of conflicts in Zimbabwe and Southern Africa. Emphasis on socio-economic causes of conflicts; cultural differences and conflicts; problems of development as sources of conflicts; inter-African conflicts; settler-African conflicts; international dimensions of conflicts; and solutions to conflicts. (Sp, Su)

HIST 263 Seminar: Russia and the CIS 3
Semester Prerequisite: None
A survey of Russia and its people from the Russian Revolution of 1917 to the present. Also examined will be the multinational character of the former USSR and the forces that shaped Soviet history, society, and politics, including U.S.-Soviet relations. (Su)

HIST 265 Seminar: The American Legal Tradition 3
Semester Prerequisite: None
A historical survey of the origins, growth, and development of the American legal-constitutional process. The legal system is studied in the context of American culture by examining the leading cases, philosophies, scholars and institutions, and approaches to the study of law. (Su)

HIST 295 Independent Study 1
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in history. Students will invest no less than 32 hours for each credit earned. Enrollment is limited to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

HIST 296 Independent Study 2
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in history. Students will invest no less than 32 hours for each credit earned. Enrollment is limited to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

HMFS 101 Introduction to Hospitality and Food Service Operations 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 4
Introduction to the hotel-motel-food service industry explaining the individual roles of the various departments in food service and lodging operations. (F, Sp, Su)

HMFS 105 Hotel and Restaurant Human Resource Management 3
Semester Prerequisite: None
This course is a survey of principles and practices for managing human resources in the hospitality industry. Includes such topics as staffing, discipline, hiring, termination, and their corresponding rules and regulations. (F, Sp)

HMFS 131 Food Production I 4
Semester Prerequisite: None
The objective of this course is to enable the student to achieve a comprehensive educational foundation in food production management. This course will provide the student with academic theory through class discussions, and lectures emphasizing food preparation, equipment operations, and managerial procedures. Laboratory preparation required. (F, Sp, Su)

HMFS 132 Food Production II 4
Semester Prerequisite: HMFS 131
This course is designed to strengthen students' knowledge in food service management. Emphasis will be placed on the needs of potential managerial personnel as well as established hospitality industry employees in formulating the structure for sound business management in the hospitality field in addition to practical laboratory experience emphasizing food preparation. (F, Sp)

HMFS 134 Nutrition 2
Semester Prerequisite: None
Discusses basic nutrition, RDAs, energy balance, weight control, variety of diets and dietary guidelines, food processing, natural and organic foods, and fast and fresh foods. (F, Sp)

HMFS 135 Quantity Food Purchasing 3
Semester Prerequisite: None
This course is designed to teach students the study of standards in quality and quantity of food, beverages, china, glass, silver, linens, furnishings, and supplies. Also it will cover writing specifications and establishing procurement policies. This course describes how to develop and implement an effective purchasing program. It focuses on issues pertaining to supplier relations and selection, negotiation, and evaluation. It includes in-depth material regarding major categories of purchases. (F)

HMFS 137 Food Service Catering 3
Semester Prerequisite: None
This course is designed to acquaint the student with the social catering. The student will learn how to begin a catering business. He or she will learn how to purchase products, prepare menus, catering and pricing, equipment requirements, equipment maintenance, on-off premise functions, sanitation, and contractual agreements. The student will also be required to do a field project. (Su)

HMFS 190 Internship and Seminar 3
Semester Prerequisite: None
An internship available to hotel-restaurant students who have completed or are approaching 400 hours of work experience in the hospitality industry. A semester project is required. (F, Sp, Su)

HMFS 203 Hotel-Restaurant Law 3
Semester Prerequisite: None
To create an awareness of the responsibilities and rights which the law imposes upon and grants to the innkeeper; recognition of potential legal problems; legal actions against the property. (F, Sp)

HMFS 204 Human Relations/Supervisory Development 3
Semester Prerequisite: None
A human relations course covering the role of management in the hospitality industry. Specific emphasis on the supervisor's role as a leader, recruiter, trainer, and personnel manager. (F, Sp)

HMFS 205 Hotel-restaurant Management 3
Semester Prerequisite: None
A survey of management principles and practices in the hospitality industry. Includes topics such as theory of management, the management process, and management problems in key hospitality areas. (F, Sp)

HMFS 206 Front Office Management 3
Semester Prerequisite: None
Organization, control, and operation of the front office in the reservation and sale of rooms, and service. Keeping of accurate accounts and presenting bills and receipts of payment. (F, Sp)

HMFS 207 Financial Control and Management I 4
Semester Prerequisite: None
A systematic, integrated study of hotel-motel and food institutional activities. Principles, problems, and practices related to financial management will be presented. Financial statements, front office procedures, and the interpretation of accounts and statements unique to the hospitality industry will be included. (F, Sp)

HMFS 208 Financial Control and Management II 2
Semester Prerequisite: HMFS 207
A course designed to integrate the various elements of the HMFS program into a cohesive package that demonstrates how a business is established and operated. A term project involving the hypothetical establishment of a business of the student's choice will be the primary learning tool. (F, Sp)

HMFS 214 Supervisory Housekeeping 2
Semester Prerequisite: None
Provides an overview of the fundamentals of housekeeping management. This course describes the management functions, tools and practices required in today's lodging and institutional housekeeping departments. (Sp)

HMFS 215 Hospitality Sales/Marketing 3
Semester Prerequisite: None
This course is designed to provide the student with a working knowledge and practical experience which will enable them to develop and implement strategic marketing plans for hospitality properties. (F, Sp)
HMFS 229 Convention Management and Service 3
Semester Prerequisite: None
Conventional management is an integral part of today's hospitality industry. This course provides insights into convention marketing, salesmanship, detail, execution, communication, and management. A comprehensive study of methods and techniques for better service. (F)

HMFS 232 Food and Labor Cost Control 3
Semester Prerequisite: None
This course covers the principles and procedures to control food, beverage, and labor cost. Sales, income, and resources within the food service industry are also analyzed. (Sp, Su)

HMFS 233 Food Service Sanitation 2
Semester Prerequisite: None
This course introduces the sanitation principles and procedures to control food, beverage, and labor cost. Sales, income, and resources within the food service industry are also analyzed. (Sp, Su)

HMFS 251 Wine Appreciation 1
Semester Prerequisite: None
The student will be familiarized with the five basic types of wine. A short history of wine and wine wines are made, a mastery of the presentation and serving of wines, and judging by appearance, bouquet, and taste. The class will learn how to choose and store wines. (F)

HMFS 252 Wines of America 1
Semester Prerequisite: None
A survey of wine-growing areas of the United States with emphasis on the varietal selections of California, New York, Michigan, and Ohio. A study of wine making, comparative tasting, and food trips are used to acquaint the student with the wine industry in America. (Sp)

HMFS 254 Mixology 4
Semester Prerequisite: None
This course provides the student with a mastery of over 150 mixed beverages. It teaches the combination of the arts of efficient mixology and hospitality with control that distinguishes the "mixologist" from the ordinary bartender. Mixology emphasizes the need of incorporating accuracy in the preparation of beverages. (F, Sp)

HMFS 260 Gourmet Basic Cookery 2
Semester Prerequisite: None
This course is designed to teach the beginner about the basics in menu planning, shopping, preparation, service and cleanup involved in a meal. The student will become familiar with shopping lists, costs, recipes, measuring, and weighing and nutritional information will be given as necessary. The student will be preparing foods for consumption. (F)

HMFS 261 Gourmet Italian Cookery 2
Semester Prerequisite: None
This course will explore regional and national foods from Italy. The instructor will develop specialty menus for each region. Students will learn to plan Italian meals, purchase and prepare foods from the meals served. Student preparation for consumption. This course covers basic cookery techniques within regional areas of Italy. Local talent and community Italian exports contribute to the culinary bill of fare. Student preparation. (F)

HMFS 262 Gourmet Foreign Cookery 2
Semester Prerequisite: None
This course covers basic cookery using foreign foods from around the world, prepared and tasted by the student. Wine and cheese samplings are also a part of this course. Student preparation. (Sp)

HMFS 263 Gourmet American Cookery 2
Semester Prerequisite: None
This course is designed for the working person and explores four great cuisines: Regional American, French, Italian, and German. The course will include planning, preparing, presenting, and eating gourmet meals. Special attention will be provided for budgeted low-cost preparation of restaurant gourmet entrees. Student preparation. (F)

HMFS 264 Gourmet Barbecue Cookery 2
Semester Prerequisite: None
This summer-oriented course explores innovative techniques of preparing food outside. Meat, vegetables, fish, desserts, salads, and desserts are prepared throughout the term. Student preparation. (Su)

HMFS 266 Gourmet Chinese Cookery 2
Semester Prerequisite: None
Chinese cooking is noted for its diversity of taste, texture and aroma. Chinese dishes to be prepared include sweet and sour pork, chicken almond ding, and egg rolls, which will accentuate these characteristics through the use of sauteing and "red" cooking techniques. Student preparation. (F, Sp)

HMFS 273 Gourmet Cajun Cookery 2
Semester Prerequisite: None
Identification of various regional influences and cuisines which form the Cajun style, including Creole Cajun and Louisiana cookery. Identification of indigenous ingredients, seasonings, and basic cooking techniques used in Cajun cookery. A basic course designed to uncover historical as well as contemporary perspectives on these original American Culinary. (Sp)

HMFS 274 Lean Gourmet Cookery 2
Semester Prerequisite: None
Basic cookery using lean, fat, and salt, fresh herbs, spices, and chicken broth instead of cream. The focus of this course is on the food we eat. The student will learn to prepare foods for culinary and health reasons. Some dishes include liver pate, lake trout, clam chowder, and smoked trout. This course will be a complement to the nutritional science course. (Sp, Su)

HMFS 275 Bakery Products 2
Semester Prerequisite: None
A course designed to expose the student to various breads, rolls, and pastries. Demonstrations as well as student preparation in the various areas of the art of baking highlight this course. (F, Su)

HMFS 276 Ice Carving Seminar 3
Semester Prerequisite: None
This course is designed to expose the student to the tools, techniques, and skills required to carve a block of ice. The student will be carving from a block of ice before the conclusion of the course. This is a hands-on course. (Sp)

HMFS 280 Garde Manger 3
Semester Prerequisite: None
Basic cookery in the desired and presentation of cold foods. This course will introduce the student to cold food specialization, vegetable carving, hors d'oeuvres, canapes, use of spices, sauces, dressings, and complete buffet setup. Garde Manger is the showcase for the artistic presentation of foods. Student preparation. (Sp)

HMFS 281 Soups and Sauces 3
Semester Prerequisite: None
This course will help the student develop the necessary skills in the preparation of soups and sauces. The course will include the utilization of convenience food items such as stock bases and commercial mixes. The student will learn through hands-on preparation of these items. Student preparation. (Sp)

HONR 151 Honors Colloquy I 1
Semester Prerequisite: Approval Required
An interdisciplinary forum for students and faculty of the Honors Program. Consists of presentations by recognized experts in such fields as science, humanities, mathematics and computer science, communication, education, and the social sciences, followed by discussion and interchange of ideas. Requires follow-up written reports. (F)

HONR 152 Honors Colloquy II 1
Semester Prerequisite: Approval Required
An interdisciplinary forum for students and faculty of the Honors Program. Consists of presentations by recognized experts in such fields as science, humanities, mathematics and computer science, communication, education, and the social sciences, followed by discussion and interchange of ideas. Requires research write-ups using methodologies of the Liberal Studies disciplines. (F)

HORT 102 Introduction to Ornamental Horticulture 2
Semester Prerequisite: None
An introductory course involving botanical and horticultural principles and practices such as 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, Su)
HORT 105 - Pests and Problems of Ornamental Plants 2
Semester Prerequisite: None
This course is for the professional or homeowner interested in a knowledge of basic environmental and specific pest problems of trees and shrubs. Problems related to soil, light, water, planting, and fertilizer as well as insects, diseases, and vertebrates will be discussed. Integrated pest management, and total plant health concepts will form the basis for problem management. (F, Sp, Su)

HORT 107 - Beginning Floral Design 2
Semester Prerequisite: None
This is an introductory course for students interested in learning the principles of floral design. Tools and techniques as well as basic arrangement shapes are learned through hands-on experiences. Students will use fresh, silk, and dried flowers to create traditional and contemporary designs. (F, Sp, Su)

HORT 109 - Contemporary Floral Design 2
Semester Prerequisite: HORT 107/Departmental Approval
Contemporary floral designs are taught as well as theme arrangements, tools, and techniques. The basic principles of design are reviewed with the student transferring 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
Semester Prerequisite: HORT 107
This course is designed for the advanced floral designer who has demonstrated the ability to apply the principles of design. Wedding designs covered include colonial, cascade, crescent, and arm bouquets. This is a hands-on class with students working with floral materials each week. (F, Sp, Su)

HORT 143 - Cut Flower, Foliation, and Potting Plant Identification 4
Semester Prerequisite: None
The functional aspects of plant material commonly found in the floriculture industry will be covered. The identification of cut flowers, cut foliage, potted, 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 and Nursery Operations 4
Semester Prerequisite: HORT 102/Departmental Approval
This course will cover the basics of plant propagation and nursery operations. It will focus on the process of setup, planting, and follow-up maintenance. The tools and techniques of seed propagation, as well as cuttings, grafting, budding, and layering will be emphasized. Knowledge of plant selection, soils, pruning, harvesting, and marketing nursery products will be included. (F, Sp, Su)

HORT 235 - Greenhouse Structures and Environment 3
Semester Prerequisite: None
This course is an introduction to the construction and operation of a commercial greenhouse. Types of greenhouses, including construction materials, are discussed. Environmental control such as heating, cooling, and irrigation practices and procedures are presented. In addition, methods of planting, fertilizing, and insect and disease control are also included to provide a basis of knowledge for greenhouse crop production. (F, Sp, Su)

HORT 236 - Greenhouse Ornamentals 3
Semester Prerequisite: None
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. (F, Sp, Su)

HORT 237 - Bedding Plant Production 3
Semester Prerequisite: HORT 102
An advanced course for the greenhouse grower to produce healthy bedding plants at a profit. Topics will include scheduling, spacing, and production costs as well as cultural practices. New varieties will also be presented. (Sp)

HORT 238 - Garden Center and Nursery Sales Management 3
Semester Prerequisite: None
This course provides business principles for retail sales managers. A thorough discussion of management topics is presented. Emphasis is placed on planning and organizing a garden center, nursery, greenhouse, or florist operation. Effective pricing and merchandising strategies as well as advertising and display techniques are discussed. (F, Sp)

HORT 295 - Landscape Independent Study 3
Semester Prerequisite: Instructor Approval
This independent study is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required. (F, Sp, Su)

HORT 296 - Horticulture Project Lab 2
Semester Prerequisite: Instructor Approval
This independent study is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required. (F, Sp, Su)

HORT 297 - Horticulture Project Lab 4
Semester Prerequisite: Instructor Approval
This independent study is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required. (F, Sp, Su)

HUMS 110 - Seminar: Stratford Theater Trip 5
Semester Prerequisite: Departmental Approval
A "cultural practitioners" providing students the opportunity to experience exemplary theatrical productions. Academic breadth and historical perspective are achieved by attending performances, lectures, and interacting with professional. Skills of critical analysis are also exercised through exposure to fine classical writing and assessment of both oral interpretation and text. (Su)

HUMS 120 - Western Art and Music History 4
Semester Prerequisite: None
An introduction to the masterpieces of art and music from Pre-Renaissance 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 4
Semester Prerequisite: None
Classical Greek and Roman myths constitute the first half of the course with the remainder chosen from at least two of the following areas: African, American, Far Eastern, Medieval European, Near Eastern, or Norse. Reading and analysis of primary sources in translation and their cross-cultural comparison are emphasized. (F, Sp, Su)

HUMS 211 - History of Art I 4
Semester Prerequisite: 2.0 Minimum WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 5
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia, and Europe from Pre-Renaissance 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 3
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 6
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia, and Europe from the 15th to the 20th century. Emphasizes analysis and comparison of artistic concepts, styles, and techniques and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp)

HUMS 213 - World Civilizations I 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 6
Surveys the literature and art, science and technology, philosophy and religion, and social and political systems of major civilizations in Africa, Asia, Europe, and the Americas to approximately the 17th century. Emphasizes the contributions of early civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)

HUMS 214 - World Civilizations II 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 6
Surveys the literature and art, science and technology, philosophy and religion, and social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)
HUMS 215 American Civilization 4
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This course will explore the cultural foundations of the United States from the period of exploration to the present. This is an interdisciplinary course which examines central themes of American culture and their representation in history, literature, art, philosophy, and religion. [F, Sp, Su]

HUMS 220 Japanese Civilization 4
Semester Prerequisite: None
This course traces the development of Japan's cultural tradition with strong emphasis on history, religion, art, and literature. Further, this course demonstrates that modern Japan can best be understood in light of its distinctive cultural traditions. [F]

HUMS 225 Great Lakes Native Americans: History and Tradition 4
Semester Prerequisite: None
Surveys the Great Lakes Native American culture and people, the differences in oral tradition and written histories of the Great Lakes Anishinaabe (First People), the Talking Circle for community problem solving, and an introduction to the language. [F, Sp, Su]

HUMS 260 Seminar: Ancient Egypt 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 6
This course explores the achievements of one of the earliest and most successful of world civilizations. Developments in Egyptian art, architecture, and literature will be emphasized and the roles of religion, kingship, and geography will be studied. Great discoveries and discoveries of Egyptian archaeology will also be featured. [F]

HUMS 265 Seminar: Ethical Issues in Medicine 3
Semester Prerequisite: None
This course will present some of the ethical dilemmas which arise in relation to health care and develop a framework for ethical decision-making with which to deal with these and other related problems. It is designed for both health care professionals and others who are interested in these issues. [F, Su]

HUMS 295 Independent Study 1
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in humanities. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. [F, Sp, Su]

HUMS 296 Independent Study 2
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in humanities. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. [F, Sp, Su]

HUSE 100 Introduction to Human Services: Resources and Interventions 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4, Writing Level 3
This course presents an overview of the basic programs and social institutions which provide human services. It provides the student with an orientation to and overview of methods and problem-solving skills used by human service workers in a variety of settings. [F, Sp]

HUSE 101 Personal Dimensions of Human Services 2
Semester Prerequisite: None
This course explores the nature and development of personal dimensions of human services, including knowledge, values, and skills needed by people who are preparing for careers in the helping professions. The potential impact and influence of these skills on the helping process are also explored. [F, Sp]

HUSE 110 Introduction to Child Abuse and Neglect 3
Semester Prerequisite: None
This course reviews the history and scope of child abuse, including socioeconomic and psychological factors. This course explores the world of abnormal rearing; roles of community agencies and disciplines, approaches to treatment and prevention; coordination of cases and services; and legal aspects of the law. [F, Sp, Su]

HUSE 111 Introduction to Mental Health: Prevention and Interventions 3
Semester Prerequisite: None
This course presents an overview of the field of mental health with an emphasis on historical review; psycho-social stages of development; definition of mental illness, causes and treatment; prevention; current service delivery systems; and the role of the mental health associate. [F]

HUSE 112 Introduction to Substance Abuse 3
Semester Prerequisite: None
This course reviews substance abuse and the use of a historical, sociological, and psychological perspective. It includes drug classifications, street terminology, causes of abuse, and also examines present and past legislation regarding substance abuse and use. [F, Sp, Su]

HUSE 120 Introduction to Domestic Violence 2
Semester Prerequisite: None
This course provides an overview of the historical, socioeconomic, cultural, and psychological factors associated with family violence emphasizing battered women. Child abuse, woman abuse, elder abuse, and sibling violence are discussed as well as the resources available, intervention techniques, and the role of law enforcement agencies, legislative bodies, and social service agencies. [F]

HUSE 211 Family Treatment of Child Abuse and Neglect 3
Semester Prerequisite: HUSE 110
This course addresses the special problems encountered working with abusive and neglectful families, using individual groups and family intervention methods. Domestic violence and legal aspects are considered. A secondary focus is worker attention in the field, its causes, and resolution strategies. [Sp]

HUSE 240 Substance Abuse: Special Populations and Adolescent Addiction 3
Semester Prerequisite: HUSE 112
This course surveys substance abuse in various populations including adolescents, elderly, women, the hearing impaired, as well as various ethnic groups including Blacks, Native Americans, and Hispanics. Although many communities exist among the groups, each group is unique. Reasons for abuse and treatment consideration are explored within each special population. [F]

HUSE 241 Substance Abuse Prevention and Intervention 3
Semester Prerequisite: HUSE 112
This course provides a developmental framework for a better understanding of the factors contributing to substance abuse prevention. It facilitates students' abilities to critique existing programs, identify current community needs, and address the growing demand for consultation and assistance in the field of substance abuse prevention. [F]

HUSE 242 The Chemically Dependent Family 3
Semester Prerequisite: HUSE 112
This course provides a conceptual framework within which to understand, assess, and effectively intervene in a counseling fashion with the chemically dependent family. Specific subgroups and issues within or resulting from the chemically dependent family are explored. [Sp]

HUSE 244 Substance Abuse Agencies, Treatment, Addiction Patterns 3
Semester Prerequisite: HUSE 112
This course covers the addiction cycle of alcoholics and drug abusers, personality and interpersonal patterns of addiction, and casework and group work techniques. It provides an analysis of current models of treatment within programs, including review of inpatient, outpatient, halfway houses, and occupational programs. [Sp]

HUSE 271 Native American Leadership: Skills Development 3
Semester Prerequisite: None
This course presents community development issues facing Native American leaders, especially in Michigan. Focus is on developing analytical, decision-making, and leadership skills for community development. Approach utilizes theoretical and practical case study models and presentations by community leaders. [Sp]

HUSE 282 Human Services Practicum I: Organizational Systems 4
Semester Prerequisite: Departmental Approval
This course combines classroom training with beginning field experience in a community-based human services agency. Emphasis is on knowledge of the community power structure, funding bases, and the internal workings of human services organizations. Opportunities in the labor force, certification requirements, and approaches to networking are explored. [F]

HUSE 284 Human Services Practicum II: Service Delivery Skills 4
Semester Prerequisite: HUSE 282, Departmental Approval
This course provides classroom training on principles of human service delivery with advanced practical experience in a community-based human service agency. Emphasis is on identifying systems and resources to link the systems with the people and how to mobilize the systems and people. [Sp]
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUSE 286</td>
<td>Substance Abuse Practicum I: Organizational Systems</td>
<td>4</td>
<td>Semester Prerequisite: Departmental Approval</td>
<td>This course combines classroom training with field placement at a community agency specializing in substance abuse. Content focuses on the community power structure, funding basics, and the internal workings of substance abuse agencies. It explores opportunities in the labor force, certification requirements, and approaches to networking. (F)</td>
</tr>
<tr>
<td>HUSE 288</td>
<td>Substance Abuse Practicum II: Service Delivery Skills</td>
<td>4</td>
<td>Semester Prerequisite: HUSE 286, Departmental Approval</td>
<td>This course provides advanced field placement experience at a community agency specializing in substance abuse, combined with classroom instruction in concepts related to service delivery. Students identify systems and resources to link the systems with the people receiving services and how to mobilize the systems and the people. (Sp)</td>
</tr>
<tr>
<td>HUSE 297</td>
<td>Human Services Independent Study Project: 1 Credit</td>
<td>1</td>
<td>Semester Prerequisite: Learning Contract, Departmental Approval</td>
<td>This course includes special research, directed study, or service-learning projects in human services areas, such as child development, gerontology, social work, substance abuse, or related areas. It requires at least 32 hours of laboratory work or 64 hours of fieldwork. A learning contract is required. (F, Sp, Su)</td>
</tr>
<tr>
<td>HUSE 298</td>
<td>Human Services Independent Study Project: 2 Credit</td>
<td>2</td>
<td>Semester Prerequisite: Departmental Approval</td>
<td>This course includes special research, directed study, or service-learning projects in human service areas, such as child development, gerontology, social work, substance abuse, or related areas. It requires at least 48 hours of laboratory work or 96 hours of fieldwork. A learning contract is required. (F, Sp, Su)</td>
</tr>
<tr>
<td>HUSE 299</td>
<td>Human Services Independent Study Project: 3 Credit</td>
<td>3</td>
<td>Semester Prerequisite: Departmental Approval</td>
<td>This course includes special research, directed study, or service-learning projects in human service areas, such as child development, gerontology, social work, substance abuse, or related areas. It requires at least 72 hours of laboratory work or 144 hours of fieldwork. A learning contract is required. (F, Sp, Su)</td>
</tr>
<tr>
<td>HVAC 100</td>
<td>Fundamentals of Heating, Ventilating and Air Conditioning</td>
<td>3</td>
<td>Semester Prerequisite: None</td>
<td>Basic Skills Prerequisite: Reading Level 2; Writing Level 2; Math Level 2 Effective Beginning Spring 1997 (See Class Schedule) This course is an introduction to the mechanical refrigeration cycle and its individual components: compressors, evaporators, condensers, and metering devices as well as their functions are covered in detail. Also covered are exercises in psychrometrics and an introduction to system design. (F, Sp, Su)</td>
</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
<td>2</td>
<td>Semester Prerequisite: None</td>
<td>Designed to aid the installer in the skills and techniques for installation of residential heating and cooling systems. Topics covered include sheet metal layout, identification of sheet metal fittings, insulated duct, and general furnace installation procedures. (F, Sp, Su)</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
<td>2</td>
<td>Semester Prerequisite: None</td>
<td>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 usage, in conjunction with lab exercises, meters and their proper usage will be covered. (F, Sp, Su)</td>
</tr>
<tr>
<td>HVAC 111</td>
<td>Applied Electricity II</td>
<td>2</td>
<td>Semester Prerequisite: HVAC 100, HVAC 110 Concurrently</td>
<td>The study of motors with emphasis on theory, troubleshooting, and servicing. Motor controls, control circuits, protection devices, and discussion of energy conservation as related to motors will be covered in detail. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 120</td>
<td>Heating I</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 100, HVAC 110</td>
<td>Basic construction and function of components in residential gas and oil fired furnaces with detail on theory, application, troubleshooting, and servicing standard heating systems. Installation procedures and codes are also covered. Additional equipment studied will include humidifiers, air cleaners, and vent dampers. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 100, HVAC 110</td>
<td>Fundamentals and principles of residential air conditioning systems. Students will learn soldering and brazing of tubing, wiring, component testing, evacuation procedures, charging and maintenance of both split systems, as well as small packaged units. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 181</td>
<td>Heating, Ventilating and Air Conditioning Seminar</td>
<td>1</td>
<td>Semester Prerequisite: None</td>
<td>Seminar may cover any or all of the following topics: cooling, heating, humidifying, filtering, serving and/or ventilating, etc. For individuals already in the Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) field or anyone interested in these areas. (F, Sp, Su)</td>
</tr>
<tr>
<td>HVAC 182</td>
<td>Heating, Ventilating and Air Conditioning Seminar</td>
<td>2</td>
<td>Semester Prerequisite: None</td>
<td>Seminar may cover any or all of the following topics: cooling, heating, humidifying, filtering, serving and/or ventilating, etc. For individuals already in the Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) field or anyone interested in these areas. (F, Sp, Su)</td>
</tr>
<tr>
<td>HVAC 201</td>
<td>Mechanical Code</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 120, HVAC 130 Approval</td>
<td>A fundamental course designed to acquaint the student with the methods and techniques used in field inspection of mechanical systems. Both the Uniform Mechanical Code and the Building Official's Code (BOCA) Code will be discussed. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 211</td>
<td>Schematics</td>
<td>3</td>
<td>Semester Prerequisite: HVAC 120, HVAC 130</td>
<td>An in-depth study into the cause and effect aspects of schematic diagrams. The student will learn to simplify complicated schematics to obtain the sequence of operation necessary for the proper troubleshooting of heating, ventilation, and air conditioning equipment. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 220</td>
<td>Heating II</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 120</td>
<td>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)</td>
</tr>
<tr>
<td>HVAC 221</td>
<td>Introduction to Hydronics</td>
<td>3</td>
<td>Semester Prerequisite: HVAC 120</td>
<td>Covers hot water and steam residential heating systems, piping and all accessories, safety controls, expansion tanks, zone valves, installation procedures, and codes. Students perform testing, troubleshooting, adjusting, and servicing of components to ensure maximum efficiency. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 230</td>
<td>Air Conditioning II</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 130</td>
<td>Advanced air conditioning, light commercial equipment, water cooled units, cooling towers, and wiring control and line voltage circuitry. The latest in test equipment and meters will aid the student in becoming proficient in servicing and maintenance of commercial equipment. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 231</td>
<td>Heat Pump</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 230</td>
<td>This course deals entirely with heat pumps (air-to-air, water-to-air): installation, servicing, proper application of heat pump components and extensive wiring schematics. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 130</td>
<td>The student will study domestic and light commercial refrigeration systems with an emphasis on controls operation and adjustment. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 241</td>
<td>Refrigeration II</td>
<td>4</td>
<td>Semester Prerequisite: HVAC 240</td>
<td>The student will be taught servicing of commercial units, heat load calculations for component selections, special valve applications, and piping procedures. (F, Sp)</td>
</tr>
<tr>
<td>HVAC 250</td>
<td>Pneumatic Control</td>
<td>2</td>
<td>Semester Prerequisite: HVAC 230/Approval</td>
<td>Basic concepts of pneumatic controls for HVAC equipment in commercial structures; adjustment and calibration of pneumatic equipment. (F, Sp)</td>
</tr>
</tbody>
</table>
IMAG 200 Sonographic Introduction
Semester Prerequisite: Admission to Program
Introduction to sonography including equipment history, criteria, limitations of ultrasound, and sonography ethics. General information provided regarding patient preparation, history/clinical correlation, and basic nursing care specific to ultrasound. Strong emphasis on terminology and abbreviations most commonly used with ultrasound. (F)

IMAG 201 General Sonography I: Abdomen
Semester Prerequisite: Allied Health
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)

IMAG 202 OB/GYN Sonography I
Semester Prerequisite: Allied Health
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. (Sp)

IMAG 219 Sonographic Imaging
Semester Prerequisite: Allied Health
This course will provide the sono-to-graduate sonographer with an update of positioning, physics, instrumentation, and interpretation knowledge. In addition, the use of a comprehensive test will assess the student’s level of knowledge in sonographic subjects. (Su)

IMAG 234 Sonographic Physics
Semester Prerequisite: Allied Health
The student will study the fundamental principles of acoustical physics; how sound is produced and manipulated; and how it reacts in various mediums. (F)

IMAG 245 Sonographic Instrumentation
Semester Prerequisite: IMAG 234
The student will be introduced to the mechanics of A-Mode, M-Mode, Doppler, and Real-time equipment. Accessory equipment such as the camera, transducer, and cathode ray tube will be presented. Methods of quality assurance will also be presented. (Sp)

IMAG 255 General Sonography II: Abdomen and Small Parts
Semester Prerequisite: IMAG 201
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. (F)

IMAG 256 OB/GYN Sonography II
Semester Prerequisite: IMAG 202
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 290 Introduction to Clinical Experience I
Semester Prerequisite: Admission to Program
First course in a three-semester sequence of clinical application in diagnostic medical sonography. The course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours. (F)

IMAG 291 Clinical Experience II
Semester Prerequisite: IMAG 290
Building on material presented in IMAG 280, this is the second course in a three-semester sequence in diagnostic medical sonography. The course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit to three clinical clock hours. (Sp)

IMAG 292 Clinical Experience III
Semester Prerequisite: IMAG 281
Based on material presented in IMAG 281, this is the third course in a three-semester sequence of clinical application in diagnostic medical sonography. Course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours. (Su)

IMAG 101 Basic Photography for Non-Majors
Semester 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. For students who do not plan to major in imaging technology. (F, Sp, Su)

IMAG 102 Advanced Photo for Non-Majors
Semester Prerequisite: IMAG 101/Equivalent
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, Su)

IMAG 103 Basic Film Production for Non-Majors
Semester Prerequisite: None
Introduces story telling using sound and picture. Students plan and produce short programs, developing basic skills in plot structure, staging scenes, camera, sound, and editing. For students with little or no previous film experience and who do not plan to major in imaging technology. (F, Sp, Su)

IMAG 105 Color Printing for Non-Majors
Semester Prerequisite: IMAG 102/Departmental Approval
A basic color printing course designed for students who do not plan to major in imaging technology. Emphasis will be on exposure controls of negative color films and the production of quality color prints from both negatives and slides. (Su)

IMAG 111 Introduction to Photographic Technology I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3, Writing Level 3, Math Level 1 or Effective Beginning Spring 1997 (See Class Schedule)
Introduces students to photographic technology on both a theoretical and practical level. The student will learn camera types and related equipment, exposure controls, beginning and intermediate black-and-white film processing and printing, including contrast controls. This course is the first of a two-course sequence for imaging technology majors. (F, Sp, Su)

IMAG 112 Design Fundamentals for Imaging Technologies
Semester Prerequisite: IMAG 101/IMAG 111/Concurrently, Departmental Approval
This course introduces students to design theory and its application to imaging technologies on both a practical and theoretical level. Students will learn and apply design elements and principles to their evolving work. (F, Sp, Su)

IMAG 113 Lighting Concepts and Applications
Semester Prerequisite: IMAG 101/IMAG 111/Concurrently, Departmental Approval
Introduces the student to fundamental lighting concepts encountered in the studio and on location. Students will learn to apply their knowledge by identifying and solving common photographic lighting problems. Students will use professional continuous and electronic flash equipment to produce acceptable images. (F, Sp, Su)

IMAG 114 Introduction to Photographic Color Technology
Semester Prerequisite: IMAG 112, IMAG 113, Departmental Approval
Basic Skills Prerequisite: Reading Level 3, Writing Level 3, Math Level 1 or Effective Beginning Spring 1997 (See Class Schedule)
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
Semester Prerequisite: IMAG 114 Concurrently
Introduces student to practical applications of contemporary color photographic materials and processes. Students will learn through laboratory experiences, demonstrations, and other direct involvement with color imaging materials and equipment. Designed to increase the student’s technical working knowledge and problem solving skills when working with currently available color photographic materials. (F, Sp, Su)

IMAG 117 Introduction to Photographic Technology II
Semester Prerequisite: IMAG 111, Approval Required
Continuation of IMAG 111. Students will learn intermediate and advanced black-and-white exposure, developing, and printing techniques and techniques. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Successful completion required for continuation in the Imaging Technology Program (Still Track) at the 200 level. (F, Sp, Su)
IMAG 118  Film Production I
Semester Prerequisite: None
Introduces storytelling practices using sound and pictures. Students will learn to plan and produce short programs, developing basic skills in plot structure, staging scenes, photography, sound recording, editing, and audience evaluation. (F, Sp, Su)

IMAG 120  Photographic Technology Lab
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for students whose lack of photographic competencies prevent their continuation in the Imaging Technology Program above the 100 level. Individualized learning objectives are formulated for each student. Successful completion of these objectives will allow the student to continue into the 200 level course sequence. (Sp, Su)

IMAG 121  Imaging Technology
Semester 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
Semester 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 in Commercial Photography
Semester Prerequisite: Departmental Approval (Approved Photo Credits)
Exposes students to photography for commercial use. Students will explore various tools, 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 Photographic Communication
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval (Approved Photo Credits)
Designed for intermediate and advanced students to enhance their competencies and explore areas of interest using still photography in combination with words. Emphasis on communicating clear messages to mass media audiences through documentary photography, newspaper and magazine photojournalism, and public relations photography. (F, Sp, Su)

IMAG 203  Topics in Film Multimedia
Semester Prerequisite: Departmental Approval (Approved Photo Credits)
Provides students with basic photographic skills, an opportunity for intensive study in selected aspects of motion picture production, or multimedia production. (F, Sp, Su)

IMAG 204  Topics in Imaging for Self-Expression
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval (Approved Photo Credits)
An exploration of self-expression through various imaging technology-based tools, processes, and thought. Students will create process-based images and will research, discuss, critique, formulate opinions, and establish personal goals in order to better understand and practice personal style and expression. (F, Sp, Su)

IMAG 205  Topics in Hybrid Imaging
Semester Prerequisite: IMAG 171, Departmental Approval (Approved Photo Credits)
Designed for intermediate and advanced students to enhance their competencies and explore the areas of emerging hybrid imaging tools and techniques. (F, Sp, Su)

IMAG 206  End Technologies
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
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
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
An exploration of historical, ethical, and aesthetic issues relating to imaging technology. Intended to help students better understand, appreciate, and make aesthetic judgments about historical, contemporary, and future imaging technology issues. (F, Sp, Su)

IMAG 208  Input Processors
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and knowledge in the areas of currently available image input and creation technologies. (F, Sp, Su)

IMAG 220  Intermediate Still Imaging Technology
Semester Prerequisite: IMAG 114, IMAG 115, IMAG 117, IMAG 121, IMAG 122, Departmental Approval
Introduces students to techniques and practices of photography, documentary photography, and public relations photography. Historical and contemporary photographic styles that reflect the programs 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 221  Advanced Still Imaging Technology
Semester Prerequisite: IMAG 220, Departmental Approval
Introduces students to techniques and practices of photography, documentary photography, and public relations photography. Historical and contemporary photographic styles that reflect the programs areas of emphasis will be examined. Students will apply critical thinking processes and imaging technologies to produce a portfolio of work illustrating their areas of special interest. (F, Sp)

IMAG 222  Intermediate Color Applications and Technology
Semester Prerequisite: IMAG 114, IMAG 115, IMAG 117, IMAG 121, IMAG 122, Departmental Approval
Introduces the student to the contemporary materials and processes of the negative to positive color photographic print process. Students will learn to produce professionally acceptable prints from a wide variety of color negatives by applying color balancing and printing controls, print finishing techniques, and color efficiency skills to their work. (F, Sp, Su)

IMAG 223  Advanced Color Applications and Technology
Semester Prerequisite: IMAG 222, Departmental Approval
A continuation of IMAG 222 that involves the advanced student with color as a critical communication tool. Students, individually and as team members, will learn to produce highly effective and professionally acceptable photographs with color transparency film. A high level of technical accomplishment and aesthetic development will be reached. (F, Sp)

IMAG 224  Emerging Image Technologies I
Semester Prerequisite: IMAG 117/IMAG 118, IMAG 121, IMAG 122, Departmental Approval
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)

IMAG 225  Emerging Image Technologies II
Semester Prerequisite: Departmental Approval
An advanced-level study that further explores the effects of new technologies and processes on the areas of photography and imaging. (Sp)

IMAG 226  Film Production II
Semester Prerequisite: IMAG 118
An intermediate-level course that exposes the student to advanced storytelling practices using sound and images. Hands-on production exercises help the student to develop skills in scriptwriting, storyboarding, production planning, photography, animation, editing, and sound track production. (F, Sp)

IMAG 227  Film Production III
Semester Prerequisite: IMAG 226
A continuation of IMAG 226 for moving image majors. Hands-on production exercises help the student to develop skills in scriptwriting, directing, working with dialogue shooting, and editing sound. Students work individually and as group members and apply critical thinking and problem-solving processes to produce creative, dramatic, and effective communications programs. (F, Sp)

IMAG 228  Independent Study
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to pursue study in areas not formally taught within the curriculum. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration. (F, Sp, Su)
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IMAG 229 Advanced Imaging Applications
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
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
Semester Prerequisite: IMAG 221, IMAG 223, IMAG 224, IMAG 227
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. (F)

IMAG 231 Imaging Technology Major II
Semester Prerequisite: IMAG 230, Departmental Approval
A continuation of IMAG 230. Continued emphasis on problem solving, critical thinking, refining technical, aesthetic, and communication skills. Students will create professional-quality images that may be included in the portfolio which is required for completion of the Imaging Technology Program. (Sp)

IMAG 232 Internship
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work as an intern developing competencies in the technical, business, creative, and communicative aspects of photography, filmmaking, or electronic imaging. Acceptable written application and internship agreement required prior to registration. (F, Sp, Su)

IMAG 233 The Business of Photography: Practices and Directions
Semester Prerequisite: IMAG 224, Departmental Approval
Exposes students to 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 they specialize and interests fit within the industry. (F, Sp)

IMAG 234 Portfolio Assembly and Degree Completion Activities
Semester Prerequisite: Portfolio Review, Departmental Approval
Concluding course for photo program associate degree. Finalizes the student's portfolio and immediate career plans. Students edit and assemble their best work into a cohesive, visual resume in order to secure employment or gain admission to another institution for continued studies. Students present portfolios in a public program. (Sp)

IMAG 238 Project Lab For Independent Study
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to pursue study in areas not formally taught within the curriculum when these studies require the use of the Photography Center facility. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration. (F, Sp, Su)

IMAG 240 Internship
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work as interns developing competencies in the technical, business, creative, and communicative aspects of photography, filmmaking, or electronic imaging. Acceptable written application and internship agreement required prior to registration. (F, Sp, Su)

INAU 100 Introduction to Industrial Automation
Semester Prerequisite: None
This course provides a hands-on introduction to current manufacturing technology. Students will learn to use MS/PC DOS computer including word processor, spreadsheet, and operating system applications. Students will experience the use of industrial robots, programmable logic controllers, machine vision, computer-aided design, discrete electronic components, and statistical process control. (F, Sp, Su)

INAU 101 Introduction to Industrial Computers
Semester Prerequisite: Departmental Approval
This course provides a hands-on introduction to current computer technology. Students will be introduced to the MS/PC DOS computer including word processor, spreadsheet, and database managers. This course is restricted to apprentices only. (F, Sp)

INAU 200 Applied Automation
Semester Prerequisite: INAU 110
Provides experience in the operation, programming, and setup of automated industrial equipment, including robots, vision equipment, and industrial software. (F)

INSU 121 Property and Liability Insurance Principles
Semester Prerequisite: None
This course will cover the basic principles of insurance, an introduction to insurance contracts, and an overview of the nature and operation of the insurance business. (F)

INSU 122 Personal Insurance
Semester Prerequisite: INSU 121
This course will cover the basic personal loss exposures and how they can be mitigated through insurance: automobile, homeowners, life, health, and other such insurances. It will also discuss governmental insurance for personal loss and how personal insurance affects society. (F, Sp)

INSU 123 Commercial Insurance
Semester Prerequisite: INSU 121
This course will cover all major forms of commercial liability and property insurance. In addition to covering standard property and casualty forms, the course will also include Boiler and Machinery, Farm, Ocean Marine, Surety and Excel and Surety Lines coverage. (F, Sp)

INSU 265 Principles of Risk and Insurance
Semester Prerequisite: None
At the completion of this course, the student will have a working knowledge of the theory of risk insurance terminology, legal insurance contracts, and use of risk management. (F, Sp)

INTR 106 Interior Design Graphic Standards
Semester Prerequisite: None
This course covers theory and application of graphics for designers, with an emphasis on architectural lettering. Drafting equipment, media, reproduction methods, lines, small scale freehand pencil lettering, sketching, signage, and an introduction to lettering with computers are also included. (F, Sp)

INTR 110 Applied Design, Two-Dimensional and Color
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
A studio course in basic design theory. Includes basic principles and elements of color theory and application, two-dimensional (2-D) and three-dimensional (3-D) design fundamentals as they relate to interior design. (F, Sp)

INTR 132 Design Presentation Techniques
Semester Prerequisite: INTR 106 Equivalent
This course is the study of visual and verbal presentation techniques. Students create perspective drawings and color renderings. The emphasis will be on production presentation boards. (Sp)

INTR 140 Interior Drafting and Detailing
Semester Prerequisite: INTR 106 Equivalent
Students will learn drafting techniques for interior design, floor plans, elevations, sections, axonometrics, cabinet, and furniture detailing. Emphasis on developing residential construction documents. (F)

INTR 151 Computer Aided Kitchen Design
Semester Prerequisite: INTR 140 Equivalent
This course is an in-depth study of kitchen planning, design and remodeling through computer software applications. LecturerLed (Sp)

INTR 152 Kitchen Workshop
Semester Prerequisite: None
Basic awareness of kitchen planning, design, and remodeling developed through lecture, discussion, and radiation. (F, Sp, Su)

INTR 154 Antiques and Collectibles
Semester Prerequisite: None
The student will learn to recognize, date, and evaluate antiques and collectibles from the basis of materials, methods of construction, styles, and periods. (F, Sp)
INTR 156  Interior Decorating for the Home  
Semester Prerequisite: None  
This course is a survey of interior decoration on a practical level. Emphasis is on residential furnishing and treatments. Field trips to local market resources for furniture, fixtures, furnishings, and finishes are included. (F, Sp, Su)

INTR 170  Introduction to Interiors  
Semester Prerequisite: None  
This course is a survey of the profession of interior design. Human needs are the focus of studio problems. Principles and elements of design are used to evaluate solutions to environmental design problems. Lecture/Lab. (F)

INTR 175  Space Planning and Design Process  
Semester Prerequisite: INTR 170/Concurrently/Equivalent  
This course is a study of the theory and application of interior design. Emphasis is on developing the creative problem-solving process through programming and space planning methodology using graphic written and verbal presentation. Lecture/Lab (Sp)

INTR 185  Introduction to Textiles  
Semester Prerequisite: INTR 170/Equivalent  
This course examines the basic fundamentals of textiles, including their characteristics and identification. Fabric weaves and uses, basic fiber weaves, current used complex weaves, natural fibers, and man-made fibers are discussed and studied. (F)

INTR 190  Materials for Interiors  
Semester Prerequisite: INTR 170, INTR 140/Concurrently/Equivalent  
Study of non-structural interior finishes and materials, their methods of application and installation, and their effect on the environment. Students will study kitchen, bathrooms, cabinets, ceilings, walls, floors, and paint. (F)

INTR 200  Introduction to Housing  
Semester Prerequisite: None  
This course will explore through lecture, discussion, and sketching the planning and design of the American housing industry from past to present. The impact of government, finance, zoning ordinances, codes, aesthetics, construction technology, demographics, safety, and society will be studied. (Recommended for all majors.) (F)

INTR 222  Computer-Aided Drafting and Design for Interiors  
Semester Prerequisite: TECH 100/Equivalent  
This course offers computer-aided drafting and design using AutoCAD software. Emphasis on contract furniture systems and space planning. (F, Sp)

INTR 225  Computer-Aided Design for Space Planning  
Semester Prerequisite: INTR 222, INTR 130/Equivalent  
This course is designed to further develop skills acquired in the preceding CAD course. Students will learn AutoCAD commands, AutoLISP routines, and other CAD presentation applications. (Sp, Su)

INTR 230  World Decorative Arts  
Semester Prerequisite: INTR 110/INTR 130  
This course is a survey of the history of decorative art periods, including furniture, interior textiles, and accessories. Covers periods from ancient to the 19th century industrial revolution. (F)

INTR 231  Interior Design Period Research  
Semester Prerequisite: INTR 110/INTR 132  
This course is a study of the history of the decorative art periods including furniture, interior textiles, and accessories. Covers periods for the 19th century industrial revolution to post-modern periods with an examination of preservation principles. (F)

INTR 232  Twentieth Century Design  
Semester Prerequisite: INTR 110/INTR 132  
This course is a survey of 20th century design applying to styles of furniture, accessories, textiles, and products as originated by signature designers, artists, and architects. (Sp)

INTR 240  Interior Lighting  
Semester Prerequisite: INTR 132, INTR 140, INTR 170  
This course introduces color and light as a design element for residential and commercial applications, including creating reflected ceiling and power plans, and preparing calculations for lighting needs. (F)

INTR 241  Service Learning  
Semester Prerequisite: 2nd Year Majors Only  
This course allows students to participate in community service/volunteer projects, which includes outdoor education and all forms of hands-on active learning, such as building and remodeling houses with non-profit organizations. (Su)

INTR 242  Home Furnishing Merchandising  
Semester Prerequisite: INTR 110, INTR 170  
This course examines specific home furnishings and products used in the current interiors industry. Emphasis is on furniture manufacturing and merchandising practices in department stores and showrooms. (F)

INTR 244  Three-Dimensional Visual Display  
Semester Prerequisite: INTR 110, INTR 140, INTR 170  
This course covers the development of display fundamentals in color, lighting, design, and materials for store windows, showrooms, and exhibits. (F)

INTR 246  Residential Interiors  
Semester Prerequisite: INTR 240, INTR 190/Concurrently  
This course examines the relationship of human needs to interior environmental design with emphasis on alternative housing design. (Sp)

INTR 248  Non-Residential Interiors, Systems Furniture  
Semester Prerequisite: INTR 175, INTR 240  
This course is a study of contract and commercial design. It includes designing all types of NON-RESIDENTIAL INTERIORS, programming, problem solving, furniture, fixtures and equipment, lighting, building codes, and barrier-free space planning with the use of systems furniture and computer-aided planning programs. (F)

INTR 252  Construction Documents and Specifications  
Semester Prerequisite: INTR 190, INTR 240/Concurrently  
This course is the study of practices and procedures of working drawings, interior materials, cost estimating, installation methods for furniture, cabinets, floor coverings, wall coverings, and window treatments. Emphasis on commercial specifications. (Sp)

INTR 254  Interior Design Certification Review  
Semester Prerequisite: 2nd Year Majors Only  
This course is specifically intended to prepare interior students with appropriate information plus practical exercises which will enable them to prepare for the National Council of Interior Design Qualification Examination. (F, Sp)

INTR 256  Interior Design Project Management  
Semester Prerequisite: 2nd Year Majors Only  
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 258  Interior Design Workroom Practices  
Semester Prerequisite: INTR 190  
In this course, students will study trade workroom materials, methods for commercial and residential window treatments, upholstery and bedding. This the design student the ability to communicate design concepts to the workroom. (F, Sp, Su)

INTR 260  Three-Dimensional CAD Design for Interiors  
Semester Prerequisite: INTR 225/Equivalent  
This is the third course in a series in the study of CAD applications for interior design students. Students will learn how to create 3D models, wire frames, and surfaces. (F, Sp, Su)

INTR 261  Design Project Laboratory  
Semester Prerequisite: Approval Required  
This course is a directed study of special projects not incorporated in regular course offerings. (F, Sp, Su)

INTR 262  Design Project Laboratory  
Semester Prerequisite: Instructor Approval  
This course is a directed study of special projects not incorporated in regular course offerings. (F, Sp, Su)
INTR 263 Internship 3
Semester Prerequisite: Departmental Approval
This course is a field study. Students will gain pre-career experience by working in a work environment under the supervision of a professional architect or interior designer. Regular scheduled progress reports will be given and discussed with supervising faculty member. (Sp)

INTR 270 Design Portfolio 2
Semester Prerequisite: INTR 130 Equivalent
This portfolio course is an opportunity for students to organize photographs, multimedia and display their work. At the completion of the course the student will have developed a format for a portfolio. (Sp)

IRAD 105 Introduction Radiation Therapy 3
Semester Prerequisite: Admission to Program
Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)

IRAD 108 Oncology Principles Patient Care 1
Semester Prerequisite: Admission to Program
Provides the student with the basic concepts of oncology, pharmacology, oncology emergencies, chemotherapy protocols, agents, side effects, endofe, psychological aspects of disease, and specific case studies. (Sp)

IRAD 204 Principles Oncology I 4
Semester Prerequisite: Admission to Program
This course will provide the student with a review of anatomy and physiology medical terminology related to oncology patients, and examination of attitudes toward dying, death, and cancer patients. (F)

IRAD 205 Principles Oncology II 4
Semester Prerequisite: IRAD 204
Provides the student with the fundamentals of clinical radiation oncology. Malignant conditions, their etiology, and methods of treatment are discussed. Attention is given to patient prognosis, treatment results, and the effects of combined therapies. (Sp)

IRAD 219 Clinical Radiation Oncology I 2
Semester Prerequisite: Admission to Program
The student will identify malignant conditions, epidemiology, treatment methods, radiobiological effects, and treatment considerations for general anatomical sites, such as head and neck, pelvic, etc. (F, Sp, Su)

IRAD 220 Clinical Radiation Oncology II 2
Semester Prerequisite: IRAD 219
The student will identify malignant conditions, epidemiology, treatment methods, radiobiological effects, as well as treatment planning for specific anatomical sites, such as esophagus, breast, etc. (F, Sp, Su)

IRAD 231 Radiation Therapy Physics 3
Semester Prerequisite: Admission to Program
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
Provides the student with specifics of ionizing radiation and physics of radioactivity. Details of production, transmission, and types of radiation, as well as medical uses of radioactive material and technical considerations of application are discussed. (F)

IRAD 232 Advanced Therapy Physics 3
Semester Prerequisite: IRAD 231
Provides the student with specifics of ionizing radiation and the principles of radioactivity. Details of production, transmission, and types of radiation, as well as medical uses of radioactive material and technical considerations, as well as the application to the treatment of patients are discussed. (Sp)

IRAD 234 Quality Assurance in Radiation Therapy 2
Semester Prerequisite: Admission to Program
Upon completion of this course, the student will be able to discuss and identify the optimal parameters for a functioning radiation oncology department in line with the requirements of the J.C.A.H. standards in essential areas. (F)

IRAD 235 Basic Dosimetry 3
Semester Prerequisite: MATH 121/Placement Test
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
Provides the student with the basic concepts of clinical dosimetry and treatment planning. Various external beam techniques, depth dose data, and summation of simple isodose curves are discussed. Fundamental procedures in dose measurement and verification are included. (F)

IRAD 270 Radiobiology 2
Semester Prerequisite: Admission to Program
Provides the student with the principles of cell response to radiation. Factors which influence the effects of radiation, tissue sensitivity, and environmental factors are discussed. (Sp)

IRAD 285 Clinical Experience I 3
Semester Prerequisite: IRAD 285
Second course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession. (F, Sp, Su)

IRAD 286 Clinical Experience II 9
Semester Prerequisite: IRAD 285
Third course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession. (F, Sp, Su)

IRAD 288 Clinical Experience IV 6
Semester Prerequisite: IRAD 287
Fourth course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession. (F, Sp, Su)

IRAD 289 Advanced Clinical Skills I 8
Semester Prerequisite: IRAD 289/Admission to Program
First in a series of two courses designed to provide opportunity to explore advanced concepts in radiation therapy and oncology. Course includes competency-based education combined with cognitive, psychomotor, and affective aspects of the radiation therapy profession. (F, Sp, Su)

IRAD 290 Advanced Clinical Skills II 7
Semester Prerequisite: IRAD 289/Admission to Program
Second in a series of two courses designed to provide opportunity to explore advanced concepts in radiation therapy and oncology. Course includes competency-based education combined with cognitive, psychomotor, and affective aspects of the profession performed at the level of a staff radiation therapist. (F, Sp, Su)

IRXT 100 Introduction to Imaging 4
Semester Prerequisite: Admission to Program
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
Survey of 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 the material in the practical setting. (F, Sp)

IRXT 111 Radiographic Positioning I 7
Semester Prerequisite: Admission to Program
Student radiographers are introduced to radiographic positioning of the upper and lower extremities, chest, abdomen, bony anatomic, pelvis, and spine. Associated topography, skeletal, chest, and abdominal anatomy is studied. A laboratory experience is provided to evaluate the student skills in performing each position/projection. (F, Sp)
IRXT 112  Radiographic Positioning II
Semester Prerequisite: IRXT 100, IRXT 111, 2.5 Minimum in AHCC 104
A continued study of student's radiologic positioning with the addition of a new
tract. Emphasis is placed on the various procedures such as the skull, the spine, the
abdominal area, the chest, the extremities, the vascular area, and the chest, the
abdominal area. The student will be responsible for the safe use of the radiologic
procedures and the radiologic equipment. (F, Sp)

IRXT 113  Radiographic Positioning III
Semester Prerequisite: 2.5 Minimum in IRXT 112
Special radiologic procedures are studied and some related imaging modalities
are introduced. Surveys include radiographic, cardiovascular, angiographic, mammog-
ographic, digital imaging, and tomographic studies. Special equipment and supplies
used in these examinations are surveyed: needles, catheters, high pressure injec-
tors, file changer, sterile trays, and contrast media. (F, Sp)

IRXT 114  Cross-Sectional Anatomy
Semester Prerequisite: IRXT 112, Disenrollment Approval
Provides an overview of the human body. Special emphasis will be placed on the
brain, thorax, and abdominal area. This course is designed to familiarize the student
with the major areas of the human body. (F, Sp)

IRXT 121  Radiographic Exposure I
Semester Prerequisite: Admission to Program
The formation of the radiographic image is the focus of IRXT 121. Photographic
and geometric variables are related to radiographic factors. The effects of changes
in the various factors are compared and contrasted. Finally, a study of the history of
radiology is presented. (F, Sp)

IRXT 122  Radiographic Exposure II
Semester Prerequisite: 2.5 Minimum in IRXT 121
Various beam modifiers are presented and their relationship to formation of a
radiographic image. This includes a study of manual and automatic processing and
the theory of image formation. Darkroom procedures, and quality control are
covered. (F, Sp)

IRXT 131  Radiologic Physics
Semester Prerequisite: MATH 112 or Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
Basic physical principles are related to the radiologic process. A study of basic
electricity and the operation of the X-ray unit is presented. Finally, advanced
topics regarding the formation of radiation, protection of the X-ray tube, and X-ray
examinations are studied. (F, Sp)

IRXT 132  Radiologic Protection
Semester Prerequisite: IRXT 131, Disenrollment Approval
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
This course is designed to introduce the student to the proper use of radiologic
equipment. The emphasis is placed on the technical aspects of the equipment and
safety procedures. (F, Sp)

IRXT 160  Radiologic Emergencies
Semester Prerequisite: Admission to Program
This course is designed to assist the student to master the various emergency sit-
uations encountered in the radiologic department. The theory provided will enable
the student to recognize when an emergency exists, assess the situation, and
develop a plan for immediate action. (F, Sp)

IRXT 200  Introduction to Radiologic Pathology
Semester Prerequisite: AHCC 105
A study of the radiographic appearance of the disease processes is presented.
This course will provide the student with the ability to recognize and describe
the various pathologic conditions seen on radiographs. (F, Sp)

IRXT 210  Radiographic Department Management
Semester Prerequisite: Admission to Program
This course is designed to acquaint the student with the organization, function, supervision,
and financial arrangements relative to departments of radiology. A study of K-2 equipment
for performing preventive maintenance and detecting simple functioning difficulties
are included. (F, Sp)

IRXT 212  Clinical Practice I
Semester Prerequisite: IRXT 100, IRXT 111, IRXT 121, AHCC 104
This course is a two-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 213  Clinical Practice II
Semester Prerequisite: IRXT 212
This course is a two-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 214  Comprehensive Experience I
Semester Prerequisite: IRXT 213
This course is a three-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 215  Comprehensive Experience II
Semester Prerequisite: IRXT 214
This course is a three-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 216  Comprehensive Experience III
Semester Prerequisite: IRXT 215
This course is a three-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 219  Imaging Update
Semester Prerequisite: Allied Health Professional
This course will provide the student with an in-depth overview of the basic principles
of radiology and the latest developments in the field. The course will cover the
latest advancements in radiology technology and the impact on clinical practice.
The course will also cover the ethical and legal considerations in the field. (F, Sp)

IRXT 232  Clinical Practice I-S
Semester Prerequisite: IRXT 111
This course is a two-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 233  Clinical Practice II-S
Semester Prerequisite: IRXT 212/IRXT 232
This course is a two-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 235  Comprehensive Experience II-S
Semester Prerequisite: IRXT 214
This course is a three-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

IRXT 236  Comprehensive Experience III-S
Semester Prerequisite: IRXT 215/IRXT 235
This course is a three-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)

ISCI 110  Science Discovery: A Process
Semester Prerequisite: None
This course is a three-semester sequence of clinical practice in radiology. The course is
programmed with specific performance activities. Credit is assigned for each
individual term with a ratio of one credit hour to three clinical clock hours. The ratio
for lecture is consistent with the one-to-one ratio. (F, Sp)
ISCI 121 Integrated Science for Education I
Semester Prerequisite: ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: Reading Level 5, Writing Level 4, Math Level
(See Class Schedule)
The first of two general science courses focusing on important scientific discoveries and revolutions in their cultural and historical environment. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, Sp, Su)

ISCI 122 Integrated Science for Education II
Semester Prerequisite: ISCI 121
The second of two general science courses focusing on important scientific discoveries and revolutions in their cultural and historical environment. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, Sp, Su)

ISCI 131 Integrated Science-Physical: The Science of the Water Planet
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: Reading Level 5, Writing Level 4, Math Level
(See Class Schedule)
A general education course designed to provide students with a basic understanding of the methods and applications of science. Topics include basic chemistry, thermodynamics, the hydrologic cycle, climate, and weather. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics. (F, Sp, Su)

ISCI 132 Integrated Science-Biological: Life on the Water Planet
Semester Prerequisite: 2.0 Minimum in ISCI 131
This course builds upon ISCI 131. Topics include ecosystems, population dynamics, evolution and origins, plate tectonics, and human interactions with the earth as a sustainable system. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics. (F, Sp, Su)

JAPN 115 Conversational Japanese I
Semester 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
Semester Prerequisite: JAPN 115
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
Semester Prerequisite: None
First course of a two-semester sequence in elementary Japanese. Designed to provide students with basic knowledge of Japanese for practical communication and skills in speaking, reading, writing, and listening comprehension. Provides information concerning everyday life and culture of Japan. Hiragana and katakana syllabaries and 40 Kanji will be introduced. (F, Sp, Su)

JAPN 122 Elementary Japanese II
Semester Prerequisite: JAPN 121/Equivalent/Approval
Second course of a two-semester sequence in elementary Japanese. Students receive more practice in Japanese for practical communication. Develops speaking, reading, writing, and listening skills. Previously acquired knowledge and skills are refined and ability to communicate in Japanese is increased. Additional 150 Kanji will be introduced. (F, Sp)

JAPN 201 Intermediate Japanese I
Semester Prerequisite: JAPN 122/Equivalent/Approval
First course of a two-semester sequence in intermediate Japanese. Includes introduction of more advanced grammar, vocabulary building, composition, group discussions, and more information on Japanese culture and everyday life. Additional 150 Kanji will be introduced. (F)

JAPN 202 Intermediate Japanese II
Semester Prerequisite: JAPN 201/Equivalent/Approval
Continuation of Japanese 201. Includes more advanced grammar, intensive vocabulary building, writing composition, reading contemporary materials, discussions, and student presentations of Japanese language or culture. Additional 150 Kanji will be introduced. (F, Sp)

JRN 151 Newswriting and Reporting
Semester Prerequisite: None
Introduction to and practice in writing news stories. Students learn news terminology, style, objectivity, attribution, accuracy, and copy-editing skills. Basic news-gathering and reporting tactics are presented and practiced. (F)

JRN 254 Editorial Writing
Semester Prerequisite: JRN 151/Departmental Approval
A course in how to write effective editorials. Students analyze content, structure, and style of editorial models, learn methods of finding subjects, learn methods of research, and write editorials and articles on important issues. (F)

LABR 200 Introduction to Labor Relations
Semester Prerequisite: None
This course surveys both historical and legal frameworks of the labor movement. Major labor laws, causes and goals of the labor movement, and union structure and behavior will be discussed. Students will explore both labor and management approaches to solving employment disputes. (F, Sp, Su)

LABR 201 Collective Bargaining
Semester Prerequisite: LABR 200/Departmental Approval
This course studies the collective bargaining process, the administration of collective bargaining agreements, and wage/benefit issues of employment. (F, Sp, Su)

LABR 202 Grievances and Arbitration
Semester Prerequisite: LABR 200/Departmental Approval
Grievance procedure, including employee discharge and discipline, is examined in-depth with a review of pertinent legislation. This class will introduce the basic knowledge and skills necessary for grievance handling and understanding the fundamentals of contract language. (Sp)

LABR 203 Labor Law
Semester Prerequisite: LABR 200/Departmental Approval
An in-depth study of traditional labor law including NLRA, court decisions, and historical origins which impact union organizing, representation elections, unfair labor practices, bargaining, strikes, and enforcement of labor contracts. (Sp)

LABR 204 Employment Law for Managers
Semester Prerequisite: None
This course provides an introduction and overview to the principles and application of laws affecting the workplace, not including traditional labor relations law. Areas of law covered include discrimination, wage-hour, unemployment benefits, personnel records, and common law issues relating to discharge and other matters. (F, Sp)

LAND 100 Introduction to Landscape Drafting
Semester Prerequisite: None
This course covers the use of drafting equipment with an emphasis on lettering, line convention, and title blocks. Students will develop a basic format for design construction drawings. The course provides essential skills for beginning the Landscape Program. (F, Sp, Su)

LAND 104 Landscape Lecture Series
Semester Prerequisite: None
This course is the study of the many facets in the field of landscape architecture and horticulture. (F, Sp)

LAND 120 Principles of Landscape Contracting
Semester Prerequisite: None
This course will explore the field of landscape contracting and its relationships to landscape architecture and management. Landscape contractors and their role in 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, Su)
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LAND 130 Interior Landscaping 3
Semester 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, including soil media, watering, light requirements, fertilizer, and insect and disease control. Management in relation to the plant’s placement and use within the interior landscape is also discussed. (F, Sp)

LAND 132 Residential Landscaping 2
Semester Prerequisite: None
This course highlights a basic design process approach for developing a home landscape. The development of a basic design focusing on your own home including placement of plant material, 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 Residential Landscape Maintenance 3
Semester Prerequisite: None
This course will provide a basic understanding of landscape maintenance problems and solutions. Students will develop records and schedules for pest control as well as tree, shrub, lawn, and flower maintenance. Plant selection, installation, pruning, and fertilization will be covered. (F, Sp, Su)

LAND 140 Evergreen and Deciduous Trees 3
Semester 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, Sp, Su)

LAND 141 Flowering Trees, Shrubs, Ground Covers 3
Semester 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. (F, Sp, Su)

LAND 142 Perennial and Annual Flowering Plants 3
Semester Prerequisite: None
This course covers the identification and basic culture of approximately 170 perennial and annual flowering and budding plants. Specific features of each plant will be discussed in relation to their proper landscape use. Herbs, grasses, rock and water garden plants will also be highlighted. (F, Sp, Su)

LAND 145 Orientation to Landscape Architecture and Planning 3
Semester Prerequisite: None
This course will introduce the student to various aspects of the landscape architectural profession. Different aspects of the profession will be presented through discussion, videos, slides, field trips, and guest speakers. Topics will include urban planning, zoo design, ecological planning, landscape construction, recreation, and park design. (F, Sp, Su)

LAND 150 Principles of Landscape Architecture 3
Semester 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 Communications-Beginning 3
Semester Prerequisite: LAND 150 (Concurrent)
This course explores basic illustration techniques relative to the field of landscape architecture. Both the formal and informal applications of mechanical and free-hand drafting communication are emphasized to include reproduction printing methods. (F, Sp, Su)

LAND 153 Landscape Graphics Communications-Advanced 3
Semester Prerequisite: LAND 152
This course acquaints the student with visual presentation techniques used in landscape architecture. Plan, section, and three-dimensional graphics are explored using a range of media. The students will develop sketching and mechanical-drafting techniques for the preparation of professional graphic presentations. (F, Sp)

LAND 156 Planting Design I 3
Semester Prerequisite: LAND 140, LAND 141, LAND 153
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, Sp, Su)

LAND 161 Planting Design II 3
Semester Prerequisite: LAND 140, LAND 141, LAND 160
This course applies the planting design skills gained in LAND 160 to a broad range of sites and issues typically encountered in today's landscape design and construction industries. Topics covered include functional uses of plants, native plant material, and planting design in the urban environment. (F, Sp)

LAND 153 Designing Ornamental Gardens 3
Semester Prerequisite: LAND 100, LAND 140, LAND 142
This course is a practical approach to designing the herbaceous garden. Annuals, perennials, herbs, and ornamental grasses are analyzed to 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, Su)

LAND 164 Site Design I 3
Semester Prerequisite: LAND 160, LAND 152
This course emphasizes use of the design process to solve a variety of urban and non-urban site planning problems. Project design solutions require graphic delineation, stressing plan view presentations. A variety of drawing scales, graphic materials, and techniques will be explored. (F, Sp, Su)

LAND 165 Site Design II 3
Semester Prerequisite: LAND 164
This course focuses on advanced analysis and planning techniques for business, housing, and recreational sites. Environmental impact considerations and land use conflicts are examined and applied in creating alternative design solutions. (F, Sp)

LAND 170 Site Grading I 3
Semester Prerequisite: LAND 150
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(SSee Class Schedule)
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, Sp, Su)

LAND 171 Site Grading II 3
Semester Prerequisite: LAND 170
This is an advanced site-grading course that builds on the skills gained in LAND 170. This Michigan Soil Erosion Control Act is emphasized with respect to the requirements related to circulation systems and recreational and utility facilities. (F, Sp)

LAND 172 Site Layout 3
Semester Prerequisite: LAND 171
This course covers plan dimensioning and layout techniques for vehicle and pedestrian circulation systems, building locations, utilities, and sporting and recreational facilities. Professional graphic techniques are emphasized. (F, Sp)

LAND 180 Landscape Ecology 3
Semester Prerequisite: None
This course is for the professional as well as the interested individual covering the relatively new field of landscape environments. Develop a basic understanding of landscape communities, how they develop, and how they function. Plant communities, native species, natural design, and environmental impact are some of the topics covered. (F, Sp, Su)

LAND 181 Landscape Restoration and Management 3
Semester Prerequisite: None
This course will cover the detailed steps necessary to complete a total restoration of a damaged ecosystem. Specific system designs dealing with wetlands and prairies in particular will be highlighted. Specific native plants, animals, and insects will be discussed. Field experiences and native plant identification are a critical part of this course. (F, Sp, Su)
LAND 192 Wetland Delineation and Evaluation 2
Semester Prerequisite: None
This course will explore the basic elements of wetland identification. Wetland indicator vegetation, hydric soils and wetland hydrology will be covered. The U.S. Army Corps of Engineers Wetland Delineation Manual will be used as the guideline for this class. Certification credits can be secured by taking this course. (F, Sp)

LAND 193 Planned Wetlands Evaluation and Restoration 2
Semester 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, evaluation, and management will also be discussed. (F, Sp)

LAND 185 Arboriculture (Urban/Forestry) 3
Semester Prerequisite: None
The care of trees and shrubs in the urban environment is thoroughly discussed. The course emphasizes tree physiology as it relates to plant selection, installation, decay prevention, pruning, and fertilizing. Field demonstrations of arboricultural practices such as pruning, bracing, and fertilizing will be offered. (F, Sp, Su)

LAND 195 Irrigation Design and Management 3
Semester Prerequisite: None
This course is for the professional or beginner interested in irrigation system design, installation, maintenance, and troubleshooting. Lectures will cover a range of systems including residential, commercial, drip, and golf courses. (F, Sp)

LAND 220 Wetland Restoration .5
Semester Prerequisite: None
This course will present current information available from the MDNR, EPA, and U.S. Army Corps of Engineers as it relates to wetland regulations and policy. Wetland delineation, mitigation, design, construction, and planting will be highlighted. Restoration enhancement and creation of wetlands will be outlined and developed. (F, Sp, Su)

LAND 222 Landscape Construction Techniques Beginning 3
Semester Prerequisite: LAND 120 Equivalent
This course will deal with the basic concepts needed to operate as a landscape contractor in the design/build industry. The fundamentals of landscape design evaluation, development of materials lists, and cost take offs will be demonstrated. Basic site analysis, site survey, drainage, and grading techniques will be demonstrated. (F, Sp, Su)

LAND 225 Landscape Cost Estimation 3
Semester Prerequisite: LAND 150 Equivalent
This course is an introduction to the study of landscape contracting and the cost estimating process. The class covers the project management process and the costing factors associated with it. The areas of material costs, equipment cost, labor costs, and related management charges will be evaluated. The preparation of bids and the bidding process will be highlighted. (F, Sp)

LAND 232 Professional Residential Landscape Design 3
Semester Prerequisite: LAND 100 Equivalent
This course is designed for the individual interested in residential and small commercial business. A scale design projects on a professional scale. Several design problems will be presented and detailed projects will be developed. (F, Sp, Su)

LAND 233 Grounds Management 3
Semester Prerequisite: LAND 232
The student will evaluate a landscape design and 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
Semester Prerequisite: None
This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrated. Field trips to planning meetings and project sites will be an intrinsic part of this course. (F, Sp, Su)

LAND 250 Landscape Construction Methods 3
Semester Prerequisite: MATH 050, LAND 150
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (Gac Class Schedule)
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 an introduction to professional construction drafting techniques. (F, Sp)

LAND 252 Landscape Construction Details 3
Semester Prerequisite: LAND 250
Focuses on graphic techniques for drafting construction details and coordination of details with site plan layout. Studies detailing utilities, irrigation systems, circulation systems, recreational facilities, and various light construction features. Design-build procedures are stressed, including material tabulation and cost estimating. (F, Sp)

LAND 276 Landscape Documents and Specifications 2
Semester Prerequisite: LAND 260
This course explores the relationship and principles between specifications and working drawings. The cost of projects as well as bid proportions will be highlighted. The student will prepare bids, write specifications, and participate in a class bid opening. (F, Sp)

LAND 277 Landscape Office Practice 3
Semester Prerequisite: None
Introduces the elements of office business practice and operation, record-keeping, on-the-job inspection, close-out, initial proposal writing, and contract formulation. (F, Sp)

LAND 282 Microcomputers in Landscape Planning 3
Semester Prerequisite: None
This course assumes no previous computer experience. A beginning class for the individual interested in computers and what they can do for you in landscape design, maintenance, construction, plant selection, and land surveying. AutoCAD will be surveyed and utilized for the computer-aided drafting and design portion of this course. (F, Sp, Su)

LAND 283 Beginning LandCADD 3
Semester Prerequisite: LAND 282/CAD Experience
This course assumes basic AutoCAD experience and begins coverage of the LandCADD package. Site planning and the related modules in site analysis, quadrangles, cost estimating, plant selection, construction details, and irrigation will be demonstrated and hands-on exercises will be completed. Basic design projects will be completed. (F, Sp, Su)

LAND 284 LandCADD Advanced 3
Semester Prerequisite: LAND 283
This course continues the LandCADD package and related modules. The student will complete detailed drawings utilizing the site planning package 3-D customization will also be covered including solid modeling, macro commands, line weights, and customized symbol library. This is an advanced LandCADD class. (F, Sp, Su)

LAND 285 Microcomputer Animation 3
Semester Prerequisite: LAND 282/Dpartmental Approval
This course will familiarize the student with the video 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 design and management-related projects. (F, Sp, Su)

LAND 286 LandCADD: Videoscapes 3
Semester Prerequisite: LAND 282
This computer course will cover how to use video imagery and animation in a landscape design situation by way of lecture, video, and computer usage. Computer paint and imaging will be demonstrated. LandCADD's software as well as others will be utilized. (F, Sp, Su)

LAND 289 Landscape Architecture Computer Design Studio 3
Semester Prerequisite: LAND 282/Equivalent
This course involves the use of computer presentation software in the three-dimensional arena. The presentation software, 3-D Studio, will be utilized to create graphic animation for various computer presentations. (F, Sp, Su)
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LAND 290: Exploring the World of Computers
Semester Prerequisite: None
This course will familiarize the green industry professional with an overview of available hardware and software systems and the configurations for a landscape or nursery operation. There will be experimentation with different software packages such as LANDCADE, CAPS, LAND Design Ware, and JACKS/COM as well as related landscape design, site planning, management scheduling, and cost estimating areas. (F, Sp)

LAND 295: Landscape Independent Study
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in landscape architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)

LAND 296: Landscape Project Lab
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in landscape architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)

LAND 297: Landscape Project Lab
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in landscape architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)

LAND 298: Pesticide Applicator Certification
Semester Prerequisite: None
The purpose of this course is to prepare the student for certification as a commercial applicator of pesticides for turfgrass and ornamental plants. Under the Michigan Pesticide Control Act, individuals applying pesticides for hire must be certified or supervised by a certified applicator. Course topics include IPM techniques, turfgrass and ornamental pest identification, and proper pesticide handling and application. (F, Sp, Su)

LAND 299: LandCAD Training
Semester Prerequisite: Approval Required
A program for the individual with basic computer and AutoCAD exposure interested in learning more about computer-aided design using the LandCAD software package. The LandCAD site planning package will be explained fully along with some additional modules such as E-Z estimate (cost estimating) package, plant materials data base, and simulated plant growth, as well as quadrangles (landscape) form. (F, Sp, Su)

LEGL 115: Legal Assistant Career and Ethics
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 7, Writing Level 6
Introduction to the legal assistant's role in the legal system, including essential skills used in the litigation process and law practice. Introduces student to legal terminology, legal analysis, and procedural and substantive law. Surveys parallel employment and regulation. 2.0 minimum required to continue program. (F, Sp, Su)

LEGL 120: Legal Research I
Semester Prerequisite: 2.0 Minimum in LEGL 115, LEGL 215
Introduces research procedures and resources for finding federal and Michigan law using digests, encyclopedias, reporters, statutes, court rules, treatises, administrative publications, diaries, 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 off-campus. (F, Sp, Su)

LEGL 121: Legal Writing I
Semester Prerequisite: WHIT 122
Students will learn to analyze court opinions and apply them to particular fact situations. This skill will then be used to write summaries of court opinions, legal memoranda, appellate briefs, and other legal documents. Learning methods include reading assignments, class discussion, lecture, and writing assignments of increasing difficulty. (F, Sp)

LEGL 160: Critical Thinking in Law
Semester Prerequisite: None
This course strongly emphasizes the "learn by doing" approach, specifically by utilizing group dynamics. The panorama of thinking skills, particularly those relevant to law and criminal justice, will be examined and practiced. Innovative evaluation skills, both personal and group, are a regular part of each session. (F, Sp, Su)

LEGL 210: Litigation Procedures
Semester Prerequisite: 2.0 Minimum in LEGL 115, 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: Tort Law
Semester Prerequisite: 2.0 Minimum in LEGL 115, LEGL 215
Covers principles of negligence, intentional torts, and strict liability. Emphasizes the role of the legal assistant in dealing with these areas of law in actual practice situations. (F, Sp)

LEGL 215: Business Law I, Basic Principles
Semester Prerequisite: None
Introduction to the legal system, its purpose, and the fundamental principles of various areas of law. Course content includes sources of law, court procedures, contracts, torts, crimes, constitutional rights, no-fault auto insurance, landlord-tenant law, and bailments. Taught in traditional classroom style or via Computer Managed Learning (C.M.L.). (F, Sp, Su)

LEGL 216: Business Law II, Commercial Law
Semester Prerequisite: LEGL 215
An in-depth analysis of the Uniform Commercial Code allows students to explore the law of sales, commercial paper, secured transactions, banking, insurance, and debtor-creditor rights. Taught in traditional classroom style or via Computer Managed Learning (C.M.L.). (F, Sp, Su)

LEGL 217: Business Law III, Business Organizations
Semester Prerequisite: LEGL 215
Introduces basic business organizations, including agency law, partnerships, sole proprietorships, and corporations. Additionally, the course will delve into government regulation of business, real estate, wills, trusts, and estates. Taught in traditional classroom style or via Computer Managed Learning (C.M.L.). (F, Sp, Su)

LEGL 218: Litigation Specialties
Semester Prerequisite: LEGL 211
Covers several specialty areas of law, including personal injury, professional malpractice, products liability, workers' compensation, and no-fault auto insurance. Emphasizes role of legal assistant in these practice areas, including drafting of pleadings and other legal instruments. (F, Sp)

LEGL 219: Advanced Business Law for Accounting Majors
Semester Prerequisite: LEGL 215
This self-paced course is intended for students majoring in accounting who have a goal of becoming a CPA. This course covers the law of sales, commercial paper, secured transactions, banker-creditor relations, bankruptcy, insurance, agency, partnerships, corporations, wills, trusts, and estates; employment regulation, real property, and accountant's liability. This course is taught via Computer Manager Learning (C.M.L.). (F, Sp)

LEGL 220: International Legal Issues and Organizations
Semester Prerequisite: LEGL 215
This class will introduce global issues and organizations from the legal perspective and related economic and ethical perspectives. Cases based on events from around the globe will be used to illustrate principles, structures, and perspectives of citizens from many countries. Students will examine how these topics impact their daily activities. (Sp)

LEGL 221: Real Estate Transaction
Semester Prerequisite: LEGL 115, LEGL 215
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 buộcclosures, and landlord-tenant relationships. (F)

LEGL 222: Probate Law and Procedure
Semester Prerequisite: LEGL 115, LEGL 215
Probate process will be addressed in detail, from commencement of proceedings through closing the estate of a decedent. Other topics will include wills, trusts, guardianships, conservatorships, adoptions, and other probate court procedures. Emphasis is on the part played by the legal assistant in preparation of documents and other probate practice tasks. (Sp)
LEGL 223 Domestic Relations
Semester Prerequisite: LEGL 115, LEGL 215
An 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. (3)

LEGL 224 Administrative Law
Semester Prerequisite: LEGL 115, LEGL 215
The relationship of governmental administrative agencies to private citizens is explored by studying how law is created and enforced by such agencies at the state and federal levels. Legal assistant students will focus on topics including rule-making procedures, regulations, adjudication, licensing, and informal action. (3)

LEGL 225 Legal Research and Writing II
Semester Prerequisite: LEGL 120, LEGL 121
Reviews principles of legal research, analysis, and writing. Introduces student to computer-assisted legal research (LEXIS). 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 held off-campus. (3)

LEGL 226 Legal Interviewing and Investigation
Semester Prerequisite: LEGL 115, LEGL 215
Interviewing and investigation techniques including information gathering, analysis, and effective communication. Emphasis will be placed on the role of the legal assistant with numerous practical exercises. (3)

LEGL 227 Bankruptcy and Collections
Semester Prerequisite: LEGL 115, LEGL 215
Explores federal bankruptcy law and procedure with emphasis on the legal assistant's role in collecting information, interviewing clients, and preparing documents. Topics include a comparison of selected chapters within the bankruptcy code, exemptions, preferences, petitions, schedules, and the part played by the bankruptcy trustee. (3)

LEGL 228 Computer Technology for Legal Assistants
Semester Prerequisite: CASB 102/CABS 114/CABS 121/Equivalent, LEGL 120
This course focuses on computer technology as it is applied within the law firm, including the use of computers to perform legal assistant functions in litigation support, research, communication and record management applications such as calendar and docket control and checking conflicts of interest among clients. (3)

LEGL 230 Legal Assistant Internship
Semester Prerequisite: Departmental Approval
Student will experience the paralegal career by working as a legal assistant in a supervised capacity. Placement includes private law firms, governmental law office, courts, corporations, and other related settings. Requirements include at least 160 hours in the workplace, weekly reports, seminar meetings, and performance evaluations by on-site supervision. (3)

LING 230 Introduction to Linguistics
Semester Prerequisite: None
Examines human language from the perspective of contemporary American linguistics: generative syntax, phonology, and morphology. Special attention to the structure of English. Considers regional and social variation, and implications for teachers of language skills. (3)

MACH 100 Manufacturing Processes
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 4; Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
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. (3)

MACH 105 Machine Tool Survey
Semester Prerequisite: MATH 050
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
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. (3)

MACH 106 Machine Tool Survey Workshop
Semester Prerequisite: None
Introduces students of the machine tool principles and practices used in industry. Safety, terminology, measurement, and procedures are used to complete required projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations, and hands-on projects. (F, Sp, Su)

MACH 110 Machine Tool Technology I
Semester Prerequisite: MATH 050, MACH 106
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Introduces students of shop safety, shop terminology, hand tools, machine tools, measurement, and layout practices. To complete the course, a series of lectures, demonstrations, and projects are used to guide the students. The competency required to successfully complete this course is at the apprentice level. (F, Sp)

MACH 111 Machine Tool Technology II
Semester Prerequisite: MACH 110
This course is structured to apply hands-on applications to metal working saws, mills, drills, and surface grinders. Bench work and layout procedures with technical terminology and mathematical applications are developed to the technical level of an apprentice. (F, Sp)

MACH 112 Machine Tool Technology III
Semester Prerequisite: MACH 111
This course will use machine tooling, precision grinding, close tolerance milling, lathe work, and broaching to complete the required projects. The student will accomplish these goals by using modern machine shop technology applied math skills, planning, and precision measuring instruments. (F, Sp)

MACH 120 Effective Use of Machinery's Handbook
Semester Prerequisite: MACH 110/TECH 101
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
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)

MACH 130 Die Construction
Semester Prerequisite: DTDS 100, MATH 050
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course will provide each student with a basic understanding of the essential principles of cutting and forming operations, die components such as punches, punch plates, die blocks, and strippers, and an in-depth knowledge of how to repair and maintain the equipment common to the die industry. (F, Sp)

MACH 135 Metallurgy and Heat Treat
Semester Prerequisite: None
This course is designed to give students a working knowledge of the properties, uses, and heat treatment processes of commonly used metals and alloys. The basic principles of metallurgy presented apply to the design, selection, processing, and testing of metal products. (F, Sp, Su)

MACH 140 Tooling Theory and Practices
Semester Prerequisite: MACH 110
This course examines tooling used in mechanical material removal. Tooling materials from high-speed steel to cemented carbide will be discussed and demonstrated. Tooling geometry, reshaping 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 182 Machine Shop Seminar
Semester Prerequisite: None
This course may cover a variety of topics in the machine trades or related fields. For individuals already employed in the industrial environment seeking to upgrade their skills or anyone looking to be employed in a particular trade. (F, Sp, Su)

MACH 194 Machine Tool Technology Project Lab
Semester Prerequisite: MACH 120/Departmental Approval
An advanced course for students wishing to do in-depth work in the machine shop area or to develop trade-entry skills. Students select projects compatible with their individual fields of work. (Approval may be given to take this course twice for a maximum of eight credits.) (F, Sp, Su)
MACH 210  Principles of Electric Discharge Machining (EDM)  4
Semester Prerequisite: CNCP 110
This course introduces the student to the fundamentals of Electrical Discharge Machining (EDM). Safety, principles of operation, programming, and operation of both Ram and Wire EDM are explored. Lectures, demonstrations, and projects are used. Projects assigned will require setup, programming, and operation of EDM machines. (F, Sp)

MATH 001  Math Minus Anxiety Workshop  5
Semester Prerequisite: None
A workshop for students who feel unsure about doing math and need help and encouragement to succeed. Material needed for their goals. Material and exercises are aimed at reducing math anxiety, improving math study skills, and practicing problem-solving techniques. Students at any level of math may enroll. (F, Sp)

MATH 605  Mathematics Laboratory  6
Semester Prerequisite: None
When registering for a Math Lab course, students must register for both a specific course and a MATH 605 section. The MATH 605 section determines the time and place of attendance in a Mathematics Laboratory. This time is used for studying, instructional help, and testing. (F, Sp, Su)

MATH 030  Fundamental Arithmetic Skills  4
Semester Prerequisite: Placement Test
Basic Skills Prerequisite: Reading Level 3; Writing Level 1; Math Level (See Class Schedule)
The course focuses on arithmetic skills and practical applications with whole numbers, decimals, fractions, rates, ratios, and proportions. It also introduces percent and measurement concepts. Work is done both with and without a calculator. Confidence building and study skills for success in mathematics are emphasized. (F, Sp, Su)

MATH 033  Arithmetic Skills  3
Semester Prerequisite: Placement Test
Basic Skills Prerequisite: Reading Level 3; Writing Level 1; Math Level (See Class Schedule)
The course focuses on arithmetic skills and practical applications with decimals, fractions, rates, ratios, and proportions. It also introduces percent and measurement concepts. Work is done both with and without a calculator. Confidence building and study skills for success in mathematics are emphasized. (F, Sp, Su)

MATH 050  Mathematics Principles and Practices  4
Semester Prerequisite: 2.0 Minimum in MATH 020/MATH 030/MATH 033/Placement Test
Basic Skills Prerequisite: Reading Level 4; Writing Level 2; Math Level (See Class Schedule)
This course reviews mathematical operations involving fractions and decimals. Topics include percents, ratios, proportions, U.S. and metric measurements, integers, statistical graphs, Pythagorean Theorem, formulas, and geometry involving perimeter, area, and volume. It also introduces algebraic concepts using simple expressions and equations. Problem solving, estimation, and reasoning skills are taught using applications. (F, Sp, Su)

MATH 103  Introductory Algebra, Part A  2
Semester Prerequisite: 2.0 Minimum in MATH 040/MATH 050/Placement Test
Basic Skills Prerequisite: Math Level (See Class Schedule)
This course is the first half of MATH 107. Topics include properties of real numbers, properties of exponents, variable expressions, solving linear equations, ratio and proportion, polynomial operations, graphing, solving systems of equations in two variables, and inequalities. Graphing calculator, relevant applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 104  Introductory Algebra, Part B  2
Semester Prerequisite: 2.0 Minimum in MATH 050/MATH 103
Basic Skills Prerequisite: Math Level (See Class Schedule)
This is the second half of MATH 107. Topics include solving quadratic equations, factoring polynomials, solving systems of equations in two variables, rational expressions and equations, ratio and proportion, and radicals. Graphing calculator, relevant applications, and geometry are included through the course. (F, Sp, Su)

MATH 107  Introductory Algebra  4
Semester Prerequisite: 2.0 Minimum in MATH 040/MATH 050/Placement Test
Basic Skills Prerequisite: Math Level (See Class Schedule)
Topics include properties of real numbers, properties of exponents, variable expressions, solving linear and quadratic equations, polynomial operations including factoring, graphing, solving systems of equations in two variables, rational expressions and equations, ratio and proportion, radicals, and inequalities. Graphing calculator, relevant applications, and geometry are integrated throughout the course. (F, Sp, Su)
MATH 112 Intermediate Algebra

Semester Prerequisite: 2.0 Minimum in MATH 061/MATH 062/MATH 104/ MATH 107/Placement Test

Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level (See Class Schedule)

Graphing calculator required. This is an extension of Beginning Algebra, using the graphing calculator, with emphasis on graphing and applications, including linear, quadratic, rational, and other functions. Also emphasized are polynomials, rational expressions, radicals, rational exponents, equations, inequalities, systems of equations, with an introduction to complex numbers, logarithms, and matrices. (F, Sp, Su)

MATH 114 Technical Math I

Semester Prerequisite: MATH 050/Placement Test

Basic Skills Prerequisite: Reading Level 5

This course introduces and/or reviews algebra, geometry, and trigonometry. Topics include order of operations, simplifying algebraic expressions, powers, roots, formulas, area, volume ratio and proportion, linear and quadratic equations, linear systems of equations, graphing, angles, triangles, Pythagorean Theorem, and right triangle trigonometry. Emphasis is placed on problem-solving techniques for the solutions of technical applications. (F, Sp, Su)

MATH 115 Technical Math II

Semester Prerequisite: TECH 101/MATH 114/Proficiency Test

This course is a continuation of topics covered in MATH 114. Topics include: Congruent and similar triangles, properties of polygons and circles including angles, chords, and tangents, application of right and obtuse triangles using the Pythagorean Theorem, trig functions, law of sines, law of cosines, and law of cotangents. Emphasis placed on problem-solving techniques for the solution of technical applications. (F, Sp, Su)

MATH 116 Technical Math III

Semester Prerequisite: TECH 102/MATH 115

This course combines solid geometry and advanced (solid) trigonometry, enabling students to solve setup problems in mechanical drawing and drafting work. Emphasis on application of actual tooling setups for complex machining operations is used to make the course relate to real life situations. (F, Sp, Su)

MATH 117 Math for Business

Semester Prerequisite: 2.0 Minimum in MATH 062/Placement Test

Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level (See Class Schedule)

This course surveys math applications in business. Applications representing management, marketing, finance, insurance, 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

Semester Prerequisite: 2.0 Minimum in MATH 112/Placement Test

Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level (See Class Schedule)

First in two-course sequence. Graphing calculator required. Topics include functions, mathematical models, symmetry, absolute value, distance, solving equations algebraically and graphically, solving inequalities, linear functions, quadratic functions, geometric transformations, real and complex zeros, and rational, radical, exponential, and logarithmic functions. Degree credit may not be earned in both MATH 121–122 and MATH 126. (F, Sp, Su)

MATH 122 College Algebra II and Trigonometry

Semester Prerequisite: 2.0 Minimum in MATH 121/Placement Test

Second in a two-course sequence. Graphing calculator required. Topics include right triangle trigonometry, reference angles, graphing, identities, inverse trig functions, law of sines and cosines, binomial theorem, systems of linear equations, vectors, sequences, mathematical induction, series, permutations, and combinations. Degree credit may not be earned in both MATH 121–122 and MATH 126. (F, Sp, Su)

MATH 125 College Algebra and Trigonometry

Semester Prerequisite: 3.5 Minimum in MATH 112/Placement Test

Basic Skills Prerequisite: Math Level (See Class Schedule)

This is a very intensive course which covers the same material as that in MATH 121 and 122. Topics include functions, absolute value, solving equations and inequalities, graphing, linear and quadratic functions, zeros, rational, radical, exponential logarithmic and trigonometric functions, right triangle trigonometry, law of sines and cosines, DeMoivre's Theorem, binomial theorem, vectors, sequences, mathematical induction, and series. Degree credit may not be earned in both MATH 126 and MATH 121–122. (F, Sp)

MATH 130 Finite Mathematics

Semester Prerequisite: 2.0 Minimum in MATH 121/Placement Test

Basic Skills Prerequisite: Math Level (See Class Schedule)

This is an alternate course to MATH 122 for students whose programs do not require trigonometry. Topics studied include matrices, linear programming, permutations, combinations, probability, random variables, and the binomial theorem. (F, Sp, Su)

MATH 141 Calculus with Applications

Semester Prerequisite: 2.0 Minimum in MATH 121/MATH 126/Placement Test

Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level (See Class Schedule)

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

Semester Prerequisite: 2.0 Minimum in MATH 122/MATH 126/Placement Test

Basic Skills Prerequisite: Math Level (See Class Schedule)

The first of a three-semester sequence in differential and integral calculus. Topics include limits, continuity, differentiation of rational and trigonometric functions, applications of derivatives, curve sketching, elementary indefinite integration, the Fundamental Theorems of Calculus, and applications of the definite integral. (F, Sp, Su)

MATH 152 Calculus II

Semester Prerequisite: 2.0 Minimum in MATH 151

Basic Skills Prerequisite: Reading Level 5; Writing Level 6; Math Level (See Class Schedule)

Techniques of integration are emphasized along with the topics of sequences and infinite series. Also studied are exponential, trigonometric, inverse trigonometric, and logarithmic functions; improper integrals; L'Hopital's rule; conic sections; polar coordinates; and vectors in multi-dimensional space. (F, Sp, Su)

MATH 201 Math for Liberal Arts I

Semester Prerequisite: MATH 112 Proficiency

Basic Skills Prerequisite: Reading Level 5; Writing Level 6; Math Level (See Class Schedule)

Topics studied provide an understanding of what mathematics is. Topics include analysis and interpretation of data, application of functions, the real numbers, bases other than 10, n-gons, golden figures, and tiling. A strong historical theme is present throughout. The student is involved in concept development as well as in finding answers. (F, Sp, Su)

MATH 202 Math for Liberal Arts II

Semester Prerequisite: MATH 201

Topics studied provide an understanding of what mathematics is. Topics include number theory, logic, calculus, mathematical games, graph theory, trigonometry, and algorithmic reasoning. A strong historical theme is present throughout. The student is involved in concept development as well as in finding answers. (F, Sp, Su)

MATH 254 Introduction to Differential Equations

Semester Prerequisite: 2.0 Minimum in MATH 253

An introduction to the basic methods for solving ordinary differential equations, including the methods of undetermined coefficients, variation of parameters, series, Laplace transforms, and numerical methods. Applications are emphasized. (F, Sp, Su)

MATH 260 Linear Algebra

Semester Prerequisite: 2.0 Minimum in MATH 253

This introduction to linear algebra includes the study of systems of linear equations, matrix algebra, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications. (F, Sp, Su)

MATH 281 Honors Math Seminar I

Semester Prerequisite: MATH 151, Departmental Approval

Students solve a list of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp)
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MATH 282 Honors Math Seminar II  
Semester Prerequisite: MATH 151, Departmental Approval  
Students may take this course after taking MATH 281. Students solve a set of challenging student problems different from those in MATH 281, which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Su)

MATH 285 Independent Study in Mathematics  
Semester Prerequisite: Departmental Approval  
An independent study in some area of mathematics covered by an existing course. Student works independently under the supervision of a faculty member. Students devote three or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MATH 296 Independent Study in Mathematics  
Semester Prerequisite: Departmental 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. Students devote six or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MATH 297 Independent Study in Mathematics  
Semester Prerequisite: Departmental 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. Students devote nine or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MATH 298 Independent Study in Mathematics  
Semester Prerequisite: Departmental 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. Students devote 12 or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MDCS 201 Listening and Facilitation Skills  
Semester Prerequisite: None  
This seminar aims to enhance the skills of all personnel in individual listening and in facilitation of groups and teams. If participants are able to use these skills, they are more likely to function more effectively as they seek to implement organizational goals and objectives. (F, Sp, Su)

MDCS 202 Effectively Dealing With Customers, Co-Workers, and Vendors  
Semester Prerequisite: None  
In this program, participants will learn and practice strategies for dealing with customers, co-workers, and vendors. It is designed to focus on strategies for conducting successful interactions and negotiating skills between customers, co-workers, and vendors. (F, Sp, Su)

MDCS 205 Sexual Harassment  
Semester Prerequisite: None  
This seminar will increase participants’ understanding of what is and what is not sexual harassment and how to handle a situation that involves sexual harassment. Is sexual harassment subtle or blatant, whether against male or female. (F, Sp, Su)

MDCS 206 Valuing Cultural Diversity  
Semester Prerequisite: None  
Participants acquire diversity-related information applicable to such situations as communication with conflict potential, self-awareness, and work-group effectiveness. Participants define diversity in the workplace, analyze awareness of the sensitivity to diversity issues, identify difficulties of cross-cultural communication, and apply content to workplace situations. (F, Sp, Su)

MDCS 210 Solving Time Management Frustrations  
Semester Prerequisite: None  
Time-management problems originate from numerous sources. Participants will identify and analyze these sources to provide a firm basis for solving frustrating time problems. This seminar will teach how to establish goals, schedule, and utilize time management skills. (F, Sp, Su)

MDCS 214 Stress Management  
Semester Prerequisite: None  
This seminar will help participants prepare an individual stress management plan that can be applied to personal or work situations. Topics include uncovering stressors, assessing their impact, and utilizing coping techniques. (F, Sp, Su)

MDCS 221 You and Your Boss: A Successful Team  
Semester Prerequisite: None  
There’s skill involved in complementing the strengths of your boss and together forming a productive work team. This is a specific “how-to” course that trains participants to assess their strengths and those of their boss, and to build on strengths to develop successful working relationships. (F, Sp, Su)

MDCS 225 Team Work Skills  
Semester Prerequisite: None  
Effective organizations make extensive use of teams, resulting in increased productivity, quality, and customer satisfaction. This 27-hour program is designed to give participants the skills necessary to build competent teams in their individual organizations. (F, Sp, Su)

MDCS 229 Effective Presentation Skills  
Semester Prerequisite: None  
This two-day seminar covers the techniques of an effective presentation: planning, preparing, and presenting. This seminar culminates with participants giving a 10-minute presentation. Emphasis will be given to practicing and critiquing presentation skills. (F, Sp, Su)

MDCS 230 Train-the-Trainer  
Semester Prerequisite: None  
The new and the seasoned trainer can use this seminar to re-think training strategies and to sharpen skills in developing and facilitating training activities. The emphasis in this seminar is on the practical strategies of organizing and conducting instructional or training activities. There will be an opportunity to practice these skills. (F, Sp, Su)

MDCS 252 Supervisory Skills Training  
Semester Prerequisite: None  
Participants are trained in the essential processes of supervision: leading with a participative style, giving instructions, enhancing the natural motivation of employees, communicating effectively, “active listening,” improving employee performance, conducting performance appraisals, problem-solving, managing time, and building team cohesiveness. (F, Sp, Su)

MDCS 254 Advanced Supervisory Skills  
Semester Prerequisite: None  
Based on an extensive needs analysis conducted among organizations who are members of the Howell Network, this 40-hour program was designed to improve the skills (e.g., leadership, coaching, conducting meetings, performance appraisal, etc.) of supervisory level managers. (F, Sp, Su)

MDCS 260 Leading Diverse Work Groups  
Semester Prerequisite: None  
Participants in this seminar will learn to apply knowledge about work force diversity to work situations relative to human resource management, communication, potential conflict, and work group effectiveness. (F, Sp, Su)

MDCS 264 Leading Effective Meetings  
Semester Prerequisite: None  
The purpose of this workshop is to help participants develop the skills necessary for leading effective meetings. Those skills include the many facets of planning and preparing for a meeting, conducting a meeting and planning up on a meeting. (F, Sp, Su)

MDCS 270 Communicating Thoughts Effectively  
Semester Prerequisite: None  
Collecting one’s thoughts and speaking extemporaneously to present one’s reaction, viewpoint, or pertinent information is a vital ability for leaders. This workshop will instruct participants in the strategies for gathering one’s thoughts and presenting them clearly and logically. (F, Sp, Su)

MDCS 280 Improving Interpersonal Relationships  
Semester Prerequisite: None  
Good interpersonal skills are essential for productive working relationships and for maintaining an efficient working environment. This seminar provides training for managers in techniques for strengthening interpersonal skills for improved working relationships. (F, Sp, Su)

MDCS 281 Working With Difficult People  
Semester Prerequisite: None  
Difficult people create problems! In this practical seminar, participants will observe and practice effective strategies for handling difficult people. Participants will be able to reduce the problems difficult people create. (F, Sp, Su)
MEDA 100 MA Administrative/Communication Skills 3
Semester Prerequisite: Admission to Program
Introduction to role of medical assistant administrative/ clerical functions; professionalism; written communication; telephone communication; scheduling; referrals; filing; medical records management; processing incoming and outgoing mail; pegboard system, and basic banking functions. Also provides students with an understanding of interpersonal skills. (F)

MEDA 114 Legal Ethical Concepts 1
Semester Prerequisite: Admission to Program
Designed to familiarize the student with the basic concepts relating to medical ethics, legal medicine, and professional liability. (F)

MEDA 131 Clinical Skills I 4
Semester Prerequisite: AHCC 108/ANAT 145, Admission to Program
Designed to provide knowledge in clinical skills relating to the following topics: vital signs; health history and physical examination; infection control; instrument sanitation; disinfection and sterilization; problem-oriented medical records; physical therapy; and universal precautions. (F, Sp)

MEDA 132 Clinical Skills II 4
Semester Prerequisite: MEDA 131
Designed to cover both in theory and campus lab the more advanced technical skills necessary to perform in the clinical setting. Skills and procedures covered will include surgical asepsis, minor surgery assisting, electrocardiography, medication administration, radiography, and collection of specimens. (Sp)

MEDA 141 Basic Medical Laboratory Procedures 2
Semester Prerequisite: Admission to Program
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 tests will be presented including: collection and preparation of specimens, venipuncture, capillary puncture, urinalysis, and hematology testing. (F)

MEDA 142 Advanced Medical Laboratory Procedures 2
Semester Prerequisite: MEDA 141
This course enables the student to understand and perform some of the more complex laboratory tests performed in medical offices. Basic pathophysiology will be discussed. Tests from the following areas will be covered: clinical chemistry, immunology, microbiology, and hematology. Collection and preparation of specimens, etc. (Sp)

MEDA 181 Administrative Externship 2
Semester Prerequisite: MEDA 132, MEDA 142, AHCC 110
Administrative practicum is designed to provide application of administrative theory. This course is programmed with specific performance objectives and activities. (Su)

MEDA 182 Clinical Externship 2
Semester Prerequisite: MEDA 132, MEDA 142, AHCC 110
Clinical practicum is designed to provide application of theory and practice related to the clinical skills required of a medical assistant. The course is designed with specific performance objectives and activities. (Su)

METR 220 Introduction to Meteorology 4
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level (See Class Schedule)
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. (F)

MFGM 101 Industrial Hydraulics 4
Semester Prerequisite: MATH 050
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Industrial Hydraulics introduces the theory of fluid power and circuits covering pumps, pressure valves, flow valves, cylinders, filters and motors, etc., as they are used in industry today. This will be done with lectures and labs related to each of the respective components. (F, Sp, Su)

MFGM 102 Industrial Pneumatics 3
Semester Prerequisite: MATH 050
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Introduces the students to the theory of industrial pneumatic systems. The theory of gas laws, pumps, filters, valves, etc., will be discussed as they are applied to the industrial pneumatic systems. The use of lecture and labs will give the student a hands-on approach to the use of pneumatics. (F, Sp)

MFGM 110 Machine Maintenance I 4
Semester Prerequisite: MATH 050/Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Theory and industrial application of machine repair, preventive maintenance, safe practices, and troubleshooting, with actual dismantling and rebuilding of tool room machines. (F, Sp)

MFGM 111 Machine Maintenance II 6
Semester Prerequisite: MFGM 110
Advanced theory and practice of machine tool repair including preventive maintenance. Also, the theory and repair of pumps and pneumatic tools will be covered. (F, Sp)

MFGM 120 Industrial Presses 4
Semester Prerequisite: None
Covers different types of mechanical presses, terminology, purposes, and functions in industry. Includes moves and slides of mechanical action, maintenance systems, and safety, supplemented by visits to plants using presses and press repairs. For mechanical trades apprentices, press repair and maintenance people, stamping plant employees, press operators, and die setup employees. (F, Sp)

MFGM 125 Rigging 2
Semester Prerequisite: MATH 050/Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
Covers uses and strengths of ropes, chains, block and tackles, and the construction and erection of gen poles, with a study of rope knots used in rigging. Also, safe working strength of slings, hooks, sheaves, ropes and chains, and the use of personal safety equipment will be covered. (F, Sp)

MFGM 170 Fork Lift Truck Driver Training 5
Semester Prerequisite: None
This course will teach the safe operation of industrial fork trucks. The instruction will combine lecture, written materials and hands-on operation of a fork truck. Students will learn the basic safety guidelines and basic operational procedures of industrial fork trucks. (F, Sp, Su)

MGMT 200 Creative Thinking for Business 3
Semester Prerequisite: Any BUSN or MGMT Course/Departmental Approval
This course is designed to develop thinking skills and break down barriers to creativity. An experiential approach is used to apply both critical and creative thinking skills to business situations. (F, Sp, Su)

MGMT 223 Supervision 3
Semester Prerequisite: None
This course presents supervisory principles and practices for first-line supervisors. Managerial functions of planning, organizing, staffing, directing, and controlling are discussed, along with policies, decision-making, and the responsibilities of supervisors for overall work performance and employee development and evaluation. (F, Sp)

MGMT 224 Human Resource Management 3
Semester Prerequisite: None
Principles, problems, and practices of modern business, government, and other organizations involved in the handling of employees from recruiting through post-retirement. (F, Sp)

MGMT 225 Principles of Management 3
Semester Prerequisite: None
Management principles for middle- and upper-level managers: management relationships, communications, morale, motivation, history of management, theoretical framework, practical applications, qualifications of executives, business ethics, and managerial functions. (F, Sp, Su)
MGMT 227 Training and Development for Business
Semester Prerequisite: None
Training and Development for Business is a course designed to cover all aspects of training in the business environment. The course will focus on assessing training needs, identifying training barriers, curriculum design, instructional techniques, evaluation, and adult learning theory (Sp).

MGMT 228 Organizational Behavior
Semester Prerequisite: None
Examines the dynamics of interpersonal relationships at work. Integrates and applies behavioral and social science knowledge, using a systems approach, and focusing on the nature of both people and organizations. Students will study individual and group behavior and will have opportunities to work on skills necessary for successful interaction in organizations. (F, Sp).

MGMT 229 Compensation Management
Semester Prerequisite: LABR 204, MGMT 224/MGMT 229
Students will gain a practical understanding of the principles and applications of compensation management. Students will study the theories, behaviors, and legal constraints affecting compensation practices, including job analysis, job evaluation methodologies, labor market surveys, variable pay approaches, and the administration of legally mandated and voluntary employee benefit programs. (F).

MGMT 231 Team Development
Semester Prerequisite: None
This course will define and provide an understanding of team building, team leadership, and self-managed teams in the context of today's work place. Students will 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 - A Domestic and Global Perspective
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
This course explores cultural, gender/sexual, physical, and other minority experiences in the work place and in the world. The management of human resources will be examined from a global perspective. Emphasis is on helping the majority and the minority become aware of the other's opinions, feelings, and perspective. Instruction takes an experiential, awareness training approach. (F, Sp).

MGMT 237 Introduction to Total Quality Management
Semester Prerequisite: None
Provides an introduction to concepts of total quality management applied to non-manufacturing organizations. Covers the 'history' of TQM including key thinkers' leaders. Explores new ways of thinking and making, methods for continual improvement teams, empowerment, and learning organizations. (F, Sp).

MGMT 239 Time and Stress Management
Semester Prerequisite: None
This course explores relationship between time and stress management and suggests methods for harnessing energy positively. Stress is the causal factor for many of our physical and psychological problems. Techniques and strategies for wise utilization of time and energy are also explored. Emphasis on organizing action plan and enacting corrective actions. (F, Sp).

MGMT 240 How Managers Make Things Happen
Semester Prerequisite: None
This practical skills building program concentrates on the functions that most often determine management success. Students will learn how to improve their performance in key areas by analyzing their 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
Semester Prerequisite: None
This course is an overview of the various functions and processes involved in management. Students will explore possible explanations for women's slow rate of progress in attaining managerial positions. This course is enlightening and an absolute "must" for any woman who is considering entering or is now a part of management (Sp, Su).

MGMT 242 Manager's Guide to Working With People
Semester Prerequisite: None
Managers who want to work effectively with people—both on and off the job—will find this course full of valuable information. Students will acquire an understanding of human needs and motivation, leadership styles, problem-solving techniques, and effective methods for being assertive. Students will also learn how to deal with difficult behavior through positive work strategies. (Sp, Su).

MGMT 243 How to Delegate Effectively
Semester Prerequisite: None
This course will show students how to increase their productivity through delegation. It is designed to increase comfort with delegation process, and demonstrates how this method of organizing and dispersing work can help improve everyday job performance. (Sp, Su).

MGMT 244 Supervisory Management
Semester Prerequisite: None
This course is designed to help managers at all levels to develop, enhance, and update their skills. Major areas of emphasis include planning, operating, controlling, personnel functions, decision-making, job design, job analysis, and quality control within the department. (F, Sp, Su).

MGMT 245 Leadership Skills for Managers
Semester Prerequisite: None
In this course, the student will discover the secrets of great leadership and learn about the four basic leadership styles. You will master the art of goal setting, find your most effective leadership style, and know when to use the right style at the right time (F, Sp, Su).

MGMT 246 Fundamentals of Modern Personnel Management
Semester 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 How to be a Successful Project Manager
Semester 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 a project's tracking and controlling phase. (F, Sp, Su).

MGMT 248 Team Building
Semester 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 minimize the team process. Participants will focus on key aspects of team building, ranging from recruitment to empowering team members with authority and responsibility. (F, Sp, Su).

MGMT 249 Dealing With Difficult People
Semester Prerequisite: None
Discover how seasoned managers cope with difficult personalities in the workplace. This course covers effective communication, motivational, and conflict resolution approaches used by experienced managers. Students will also learn how to avoid difficult behaviors by instituting positive work strategies, structures, and values before problems develop. (F, Sp, Su).

MGMT 250 Fundamentals of Finance and Accounting/Non-Financial Managers
Semester Prerequisite: None
Provides the manager with an understanding of finance. Will help students learn to read and interpret financial statements, annual reports, and balance sheets. This course will help students use financial and accounting data more effectively. (F, Sp, Su).

MGMT 251 Communication Skills for Managers
Semester Prerequisite: None
All managers have a basic toolkit they can use to effectively get messages across to staff and colleagues: communication. This course presents practical applications for communicating such as writing effective letters, memos and reports, running meetings, conducting interviews and listening. A video supplement is included. (Sp, Su).
MGMT 252 How to Deliver a Winning Presentation
Semester Prerequisite: None
This course will provide the student with a basic awareness of the steps necessary for making an effective oral presentation. It is designed for anyone who wants to reduce the fear of public speaking by learning how to deliver presentations. (Sp, Su)

MGMT 253 How to Write Winning Reports
Semester Prerequisite: None
This course helps students develop a more concise, straightforward writing style. It will help you express your ideas more clearly in memos, letters, and reports. (F, Sp, Su)

MGMT 254 How to Write a Business Plan
Semester 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. (Sp, Su)

MGMT 256 Strategic Planning for Entrepreneurial Business
Semester Prerequisite: None
Owners and managers of new and growing businesses, as well as managers of companies that operate within an entrepreneurial environment, will learn how to prepare a strategic plan. Students will learn about organizational charts, goal-setting techniques, 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
Semester Prerequisite: None
This course is designed to help students increase facility with formulas and calculations most frequently used in business. Participants will learn to apply various ratios to test a company's strength, use statistical tools to read results more accurately, forecast more reliably, and assess the viability of a project through break-even analysis. (F, Sp, Su)

MGMT 260 How to Analyze the Competition
Semester Prerequisite: None
This course will enable students to pinpoint competitors' strengths and weaknesses, to identify and act upon competitive challenges before they occur. The course assists students in the design, implementation, and management of a competitive "intelligence" system. (F, Sp, Su)

MGMT 261 Psychology of Selling and Winning
Semester Prerequisite: None
This course helps students realize their full potential for total success. It goes beyond positive thinking or other motivational programs to offer the key that unlocks inner power. It teaches participants what to do to become top professional salespeople and why they should do it in order to sell successfully. (Sp, Su)

MGMT 262 How to Keep Satisfied Customers
Semester Prerequisite: None
This course is designed to make the task of keeping customers satisfied an easier one. The ultimate goal of this course is to help improve students' abilities to communicate effectively with customers. (F, Sp, Su)

MGMT 263 Successful Marketing for Service Organizations
Semester Prerequisite: None
Marketing concepts long associated with manufactured goods are now being applied to the service sector. Learn how to create services for markets rather than for engineers. This course is designed for service company managers and others who need to sharpen their competitive edge. (Sp, Su)

MGMT 264 How to Write a Marketing Plan
Semester Prerequisite: None
This course is designed for small business owners, marketing managers, product managers, and others responsible for creating the marketing plan. Students will learn how to create vital elements to create a marketing plan that is right for their product line, department, company, or organization. (Sp, Su)

MGMT 265 Using Microcomputers in Marketing
Semester Prerequisite: None
This course is designed for individuals who wish to benefit from online knowledge—the information superhighway. Included is a highly visual introduction to the World Wide Web, with windows overview and basic WWW skills. Students will learn to create a Web page, designed for interactive learning or reading. (F, Sp, Su)

MGMT 270 Time and Stress Management
Semester Prerequisite: None
Time management techniques can be applied to both personal and professional situations. Learners will discover basic principles of time management, and will also become aware of positive and negative stress, relaxation techniques, and ways to reduce stress through changes in lifestyle. (F, Sp, Su)

MGMT 271 Managing and Resolving Conflict
Semester Prerequisite: None
Conflict can be managed and yield positive results. Students of this course will gain practical knowledge, learn proven techniques, and acquire psychological insights they can use to resolve conflicts successfully. This course uses case studies, critical incidents, and realistic examples of conflict resolution to teach crucial skills. (Sp, Su)

MGMT 272 Success Through Assertiveness
Semester Prerequisite: None
This course will help participants in command of their career in order to respond to difficult situations according to their desires, interests, and feelings. Participants will learn how to behave assertively at the right times and in the right place to help them achieve their goals. (Sp, Su)

MGMT 273 Understanding and Assessing Personal Interaction Skills
Semester Prerequisite: None
This course is designed to increase awareness of personal styles and preferences for interacting with others. It is also designed to heighten awareness of styles and preferences of people with whom the student interacts daily. (F, Sp, Su)

MGMT 274 Personal Financial Planning
Semester Prerequisite: None
This course will show students how to begin building financial security it emphasizes spending strategies and capital-building techniques rather than housekeeping methods. Includes a computerized template disk to accompany Lotus 1-2-3 for student use during the course. (Sp, Su)

MGMT 275 How to Build Memory Skills
Semester Prerequisite: None
This course uses audiotapes and a textbook to help students learn the skills that increase their ability to obtain and utilize information. The result of using improved listening and memory skills will help students realize leadership potential. (Sp, Su)

MGMT 276 How to Improve Writing Skills
Semester Prerequisite: None
This course will show students how to improve their skills in these key communication areas by knowing how to properly use words and phrases associated with business. Workbook practice and review exercises are provided. (Sp, Su)

MGMT 277 Speed Learning
Semester Prerequisite: None
This course offers an entirely different way to read that reduces reading time while increasing comprehension. It teaches how to organize thinking systematically so the reader can learn quickly and efficiently in any reading situation. (Sp, Su)

MGMT 280 Management Internship
Semester Prerequisite: Coordinator Approval
Internships provide students with actual job training and experience by working with business owners and/or managers in organizing and/or operating a business. Minimum of 160 hours of work required. (F, Sp, Su)

MGMT 300 Introduction to Management
Semester Prerequisite: MGMT 253 and Departmental Approval
Explores the roles and functions of middle- and upper-level managers. Presents an overview and analysis of processes by which managers help organizations obtain their stated goals. Students apply managerial theories and skills to help them develop abilities in the areas of planning, communication, decision-making, change management, and ethics. (F)

MGMT 301 Strategic Management and Policy
Semester Prerequisite: MGMT 304 and MGMT 255
This course pulls together learning from the areas of management and marketing to consider an overall organizational perspective: strategic plan formulation and implementation for the whole organization. The process involves pursuing organizational mission while managing the relationship of the organization to its environment. (F)
MGMT 304 Organizational Development 3
Semester Prerequisite: MGMT 225/CMGT 300/Departmental Approval
Based on the assumption that all managers must recognize, plan for, and manage organizational change, this course examines the process of improving organizational effectiveness by means of a systematic change program. Students practice identifying problems, selecting appropriate interventions, building action plans, and developing facilitator skills. (F, Sp)

MGMT 329 Advanced Management Communication Skills 3
Semester Prerequisite: MGMT 225/CMGT 300/Departmental Approval
This advanced course develops interpersonal communication skills for business. It includes components of listening, interpersonal communication, oral presentations, interviewing techniques, meeting management, business report writing, and persuasive speaking. This class is both informational and experiential. (F, Sp)

MGMT 332 Managerial Ethics 3
Semester Prerequisite: MGMT 225/CMGT 300/Departmental Approval
Designed to sensitize participants to the impact of ethics on decision-making, both personal and organizational. Participants will examine the basis for the behavior of managers, their own behavior, various means of controlling organizational behavior, and the bases for ethical standards. (F, Sp)

MGMT 335 Managerial Statistics 3
Semester Prerequisite: MATH 082/Equivalent
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
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 Management Skills 3
Semester Prerequisite: MGMT 225/CMGT 300/Departmental Approval
Skills 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 motivating and for leading and motivating employees. (F, Sp)

MGMT 338 Current Topics in Management 3
Semester Prerequisite: MGMT 225/CMGT 300/Departmental Approval
Study of specific topics and issues in today's society that affect managerial decisions. Students explore internal and external constraints on actions. External factors considered are legal, social, educational, and political. Special emphasis is given to international events impacting domestic management practices. Internal factors considered are shareholders, employees, and customers. (F)

MGMT 339 Management Styles and Corporation Strategies 3
Semester Prerequisite: None
Numerous current materials relating to management styles and corporation strategies in Japan will acquaint the student with management as practiced in Japan. Japanese management practices are presented as an alternative managerial style for the United States to explore. (This course is offered only as part of the Japan Adventure Program.) (Sp, Su)

MGMT 345 Managerial Finance 3
Semester Prerequisite: ACCG 210
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)

MICR 201 Microbiology 3
Semester Prerequisite: BIOL, CHEM Recommended
An introduction to: bacteria, viruses, and other microorganisms as they relate to human health. Emphasis on bacterial and viral structure and life cycles, antimicrobial therapy, immunology and host defenses, and the epidemiology, treatment, and prevention of selected infectious human diseases. (F, Sp, Su)

MICR 204 Microbiology Laboratory 1
Semester Prerequisite: MIRC 203/Concurrently
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)

MIDS 101 The Military Profession 1
Semester Prerequisite: None
This course analyzes the military profession and organization of the U.S. Army from several academic Perspectives and explores the technical, ethical, and personal ramifications of service as an officer in the U.S. Army. This course provides an introduction to military leadership which draws upon examples from military history. (F, Sp)

MIDS 102 Land Navigation 1
Semester Prerequisite: None
This course includes an overview and practical exercises in the use of military topographic maps. The course will cover methods of reading and interpreting map symbols, determining elevation and relief, measuring distance, and using the techniques of intersection, resection, modified resection, and polar coordinates to determine location. Lab includes land navigation exercises using a leissic compass in a field environment. (F, Sp)

MIDS 201 Leadership Assessment Program: The Military Leader 1
Semester Prerequisite: None
This course examines individual leadership development using standardized assessment technology to evaluate potential to command and lead. Communications, administrative, personal relations and decision-making skills training, ethical career assessment, and sources of professional obligation will be reviewed. Lab includes rappelling and small arms rifle marksmanship. (F, Sp)

MIDS 202 Military First Aid, Leadership Assessment, Fitness Training 1
Semester Prerequisite: None
This course provides instruction in emergency first aid techniques including casual evaluation, life saving measures, CPR, and environmental emergency prevention. It reviews the Army's Physical Fitness Program, and individual and group fitness programs are introduced. Rappelling, individual/quad tasks, and field training exercises are provided. Lab includes leadership training. (F, Sp)

MKTG 106 Current Issues in Business 3
Semester Prerequisite: None
This course is a complete guide for anyone involved in marketing. Special emphasis is given to the importance of a professional image as it relates to business success and will develop a personal image development plan. (F, Sp, Su)

MKTG 120 Sales 3
Semester Prerequisite: None
This course presents the fundamentals of sales and highlights its role in the marketing mix. Students will develop basic skills needed to enter the field. Topics include customer buying habits, the sales process, product demonstration techniques, and the analysis of human relations aspects of sales. (F, Sp, Su)

MKTG 121 Advanced Sales 2
Semester Prerequisite: MKTG 120/Departmental Approval
An analysis of the sales interview. Student presentations are videotaped to assess individual skill levels, evaluate sales style, and provide direction for improvement. (Sp)

MKTG 122 Field Sales Internship 3
Semester Prerequisite: MKTG 120/Departmental Approval
Practical field sales experience working in consumer or industrial sales. Opportunity to develop advanced selling techniques and refine selling skills. Minimum of 160 hours of work required. (F, Sp, Su)

MKTG 123 Computer Field Sales Internship 3
Semester Prerequisite: MKTG 120/Departmental Approval
Practical computer field sales experience working in consumer or industrial sales. Opportunity to develop advanced selling techniques and refine selling skills. Minimum of 160 hours of work required. (F, Sp, Su)
MKTG 130 Retailing 3
Semester Prerequisite: None
Students will gain understanding of activities and strategies used in selling goods to ultimate consumers. The course develops an awareness of problems facing retailers and explores feasible solutions. Career opportunities in retailing are examined. (F, Sp)

MKTG 131 Merchandising 2
Semester Prerequisite: None
Functions and policies: what, when, where, how much, how to, and from whom to buy. Introduction to merchandising, merchandise management, store management and operations, how to evaluate and set up effective controls, and new trends in merchandising. Career opportunities are also explored. (Sp)

MKTG 140 Introduction to Advertising 3
Semester Prerequisite: None
Methods and techniques used in modern advertising. Information on the entire advertising function. Preparation of an advertising campaign will be required to facilitate hands-on understanding of the component parts which include marketing review, marketing plan, creative strategy, and media selection. (F, Sp)

MKTG 200 Principles of Marketing 3
Semester Prerequisite: BUSN 119/Approval
Designed to define marketing, develop an understanding of the marketing concept and functions, and generally investigate the field of marketing. Will cover the marketing environment, identify consumer needs, and examine 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
Semester Prerequisite: MKTG 200
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
Semester Prerequisite: MKTG 202
Types of data, sampling, data collection, analysis, interpretation, and applications of marketing research. A practical managerial approach—not a statistical or mathematical orientation. Students will design and execute a marketing research project. (F)

MKTG 221 Consumer Behavior 2
Semester 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
Semester Prerequisite: Coordinator Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 16 hours work is required. (F, Sp, Su)

MKTG 232 Independent Study in Marketing 2
Semester Prerequisite: Coordinator Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 32 hours work is required. (F, Sp, Su)

MKTG 233 Independent Study in Marketing 3
Semester Prerequisite: Coordinator Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 48 hours work is required. (F, Sp, Su)

MKTG 235 Marketing Internship 3
Semester Prerequisite: BUSN 118, MKTG 200, Coordinator Approval
Practical work experience in an approved business setting. Minimum of 160 hours work required. (F, Sp, Su)

MTEC 110 An Introduction to the Broadcast and Electronic Media 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
A survey of the history, technology, regulation, economics, programming, and societal effects of the electronic media. (F, Sp, Su)

MTEC 120 Audio Production I 4
Semester Prerequisite: None
A beginning course which covers the basics of audio theory and production techniques. Included are topics in tape editing, audio mixing, and basic non-linear 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
Semester Prerequisite: MTEC 120, MTEC 220 Recommended
A beginning course in audio recording which covers the basic principles of multitrack recording, both studio and remote. Emphasis is placed on microphone selection and placement, use of mixing consoles for the recording session, and multitrack recording. (F, Sp)

MTEC 122 Sound Reinforcement 4
Semester Prerequisite: MTEC 120
A beginning course in sound reinforcement which covers the theory and practice of sound systems and components used for concert sound and other live reinforcement operations. Includes equipment specifications, system design, troubleshooting, and operation of live systems. (Sp)

MTEC 130 Radio Production I 4
Semester Prerequisite: None
Survey of the radio broadcast industry. Covers careers, qualifications, responsibilities, and station operation. Introduces basic studio production and on-air presentations. (F, Sp, Su)

MTEC 150 Visual Media Design 4
Semester Prerequisite: None
This course places special emphasis on the components of effective visual communication. The development of pre-production processes related to visual composition, scriptwriting, storyboarding, lighting, and floor plot design is emphasized. An introduction to studio and field production formats is included in classroom activities. Class sessions contain instruction and performance exercises. (F, Sp)

MTEC 151 Electronic Field Production I 4
Semester Prerequisite: MTEC 150/MAG 118
This course provides the student with an introduction to the process of single camera, remote video production. In addition, the course helps the student in developing an aesthetic reference for critiquing contemporary video programming. In-class assignments are evaluated using technical and artistic guidelines. (F, Sp)

MTEC 220 Audio Production II 4
Semester Prerequisite: MTEC 120
A second course in audio production providing advanced audio theory and production practice. Included are topics in tape editing of musical material, use of audio effects in production, additional production mixing, and audio post-production for video. (F, Sp)

MTEC 221 Audio Recording II 4
Semester Prerequisite: MTEC 121
A second course in audio recording that covers advanced techniques used in multi-track studio recording. Emphasis is on use of the multi-track studio and signal processing equipment for multi-track mixing-as well as the use of SMTE and MIDI. (Sp)

MTEC 222 Sound Reinforcement Practicum 2
Semester Prerequisite: MTEC 122
A practical sound reinforcement activity combining specific theories related to the larger project with the opportunity to design, assemble, load, transport, erect, operate, and strike a large outdoor reinforcement system. Students operate the system to provide reinforcement for the bands that play in Riverfront Park on the Fourth of July. (Su)

MTEC 230 Radio Production II 4
Semester Prerequisite: MTEC 130
Presentation of advanced studio and remote-production techniques. Emphasis on writing, producing, and performing for commercials, news, and sports programs. (F, Sp)
MTEC 231 - MUSC 145  1996-1997 Catalog Lansing Community College  www.lcc.edu

MTEC 231 Radio Programming and Promotions 3
Semester Prerequisite: MTEC 130
A survey of diverse radio formats. Consideration is given to the role of the program director and the tools used in format decision-making. Techniques used in creating and promoting station image and the effects of ratings are analyzed. (Sp)

MTEC 232 Radio Workshop 2
Semester Prerequisite: Departmental Approval
An opportunity for practical experience through access to the campus radio facility. Students work in a variety of station staff positions. (F, Sp, Su)

MTEC 240 Script and Copywriting for the Media 3
Semester Prerequisite: MTEC 110
Basic writing techniques and formats used in preparing program scripts for television, radio, and multi-media productions. Emphasis on practical copywriting techniques for commercial, promotion, public affairs, documentarian, and entertainment programs. (Sp)

MTEC 241 Radio News Reporting 3
Semester Prerequisite: MTEC 130
Survey of the broadcast news industry with special emphasis on radio news. This course includes practical exercises in preparing news stories through writing, production, and presentation. Interviewing and feature production are also covered. (F)

MTEC 242 Radio Sales and Marketing 3
Semester Prerequisite: MTEC 110
An introductory course to the profession of advertising sales as it relates to the broadcast media but with special emphasis on radio, the primary training ground for broadcast media account executives. This course covers the profession from advertising basics to the activities of a winning radio sales superstar. (Sp)

MTEC 243 The Ethics and Social Impact of the Media 3
Semester Prerequisite: None
This course explores the effects of the mass media on American culture and society. Topics such as privacy, censorship, violence, and portrayals of minorities and women are discussed. These discussions take place within an ethical reasoning framework. (F, Sp, Su)

MTEC 250 Television Studio Production 4
Semester Prerequisite: MTEC 150
An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain technical instruction 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. (Sp)

MTEC 251 Electronic Field Production II 4
Semester Prerequisite: MTEC 151
An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain technical instruction 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. (Sp)

MTEC 252 Lightning for Television and Video 3
Semester Prerequisite: MTEC 150
An advanced instructional seminar on lighting techniques for video and television production. Special emphasis is placed on developing creative and critical thinking approaches applicable to a broad range of program subject matter. Class exercises and assignments are used for developing individual lighting techniques. (F)

MTEC 254 Electronic Presentational Graphics 3
Semester Prerequisite: MTEC 150
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 290 Guided Independent Study 1
Semester Prerequisite: Departmental Approval
An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration. (F, Sp, Su)

MTEC 295 Media Practicum 3
Semester Prerequisite: Departmental Approval
An opportunity to gain practical production experience in the media. Students are assigned to work on various audio, video, radio, and television projects within the Media Department. Faculty guidance and evaluation are an integral part of the experience. Practicum is intended only for advanced media technology students. (F, Sp, Su)

MTEC 296 Media Internship 3
Semester Prerequisite: Departmental Approval
An opportunity for students to work in external media settings under professional supervision. Students work closely with faculty in arranging and evaluating the workplace experience. Interview results determine intern placement. The internship is intended only for media technology majors who have completed at least 75 percent of their academic programs. (F, Sp, Su)

MTEC 299 Special Projects 3
Semester Prerequisite: Departmental Approval
An opportunity for students to work closely with faculty in the design and development of media-based programs to be used by departments or divisions within the College. (F, Sp, Su)

MUSC 100 Women's Chorus .5
Semester Prerequisite: None
An ensemble of women vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This group performs 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 133 Jazz Theory 2
Semester Prerequisite: Instructor Approval
This course is designed to acquaint students with basic jazz theoretical principles. Students will gain an understanding of chord symbols, scales and modes, chord-scale relationships, chord substitutions, and harmonization techniques. Students are required to attend live performances. (F)

MUSC 138 Class Piano Major I 2
Semester Prerequisite: Audition Approval
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 skill in accompanying a melody using a variety of patterns. Students will learn to read open score and lead sheets using letter and numerical notation. (Sp)

MUSC 139 Class Piano Major II 2
Semester Prerequisite: MUSC 138
Last in a series. This course will increase technical facility through playing more advanced scale patterns 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 numerical notation. (Sp)

MUSC 143 Beginning Piano 1.5
Semester Prerequisite: None
Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythm, notation, correct fingering and hand positions, major scales, and primary chords will be the focus for this course. May be taken up to three semesters for credit. (Su)

MUSC 144 Beginning Piano I 2
Semester Prerequisite: None
Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythm, notation, correct fingering and hand positions, major scales and primary chords will be the focus for this course. May be taken up to three semesters for credit. (Sp)

MUSC 145 Beginning Piano II 2
Semester Prerequisite: MUSC 144
This course is designed to take the student up to an intermediate level of playing. Rhythmic subdivisions, more complex fingering, and new major and minor keys are introduced. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)
MUSC 146 Intermediate Piano  
Semester Prerequisite: MUSC 145  
The focus of this course is to develop an individualized method of learning. Concepts such as phrasing and expression will be stressed for the intermediate player. Students will develop technical skills through the playing of scales and arpeggios. Students are required to attend live musical performances. May be taken up to three semesters for credit. (F, Sp)  

MUSC 154 Class Voice Commercial I  
Semester Prerequisite: None  
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/performing commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit. (Su)  

MUSC 155 Class Voice Commercial II  
Semester Prerequisite: None  
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/performing commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)  

MUSC 156 Class Voice Commercial III  
Semester Prerequisite: MUSC 155  
The advanced course in a series of two, this course will refine techniques introduced in MUSC 155. Students will prepare a final public performance. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)  

MUSC 168 Introduction to Music Internship I  
Semester Prerequisite: None  
This course is for beginning musicians to gain an understanding of reading pitch, rhythm, and music terminology and theory. Students are introduced to musical scales, key signatures, intervals, and chords. Students are required to attend live performances. (F, Sp)  

MUSC 169 Introduction to Music Internship II  
Semester Prerequisite: MUSC 168  
This course is the second in a pair of courses for novice musicians to further their understanding of music notation and theory fundamentals. MUSC 169 builds on material covered in MUSC 168. Students will learn to construct melodies, create phrases, and to harmonize a given or original melody. Students are required to attend live performances. (Sp)  

MUSC 173 Basic Music Theory I  
Semester Prerequisite: MUSC 168/Departmental Approval  
This course allows students to gain an understanding of musical principles of notation, melodic, and rhythmic organization and diatonic harmony. Aural skills are developed through intervallic, melodic, and rhythmic dictation and sight-singing. This course is the first in a sequence of two courses in music theory and ear-training as a freshman requirement for a four-year college music degree. Students are required to attend live performances. (F)  

MUSC 174 Basic Music Theory II  
Semester Prerequisite: MUSC 173  
This course allows students to gain an understanding of the theoretical principles of music including diatonic and chromatic harmony, advanced four-part writing, counterpoint, simple musical forms, and analysis. Aural skills are developed through intervallic, melodic, rhythmic, harmonic, simple, two-part dictation and sight-singing. This course is the first in a sequence of two courses in music theory and ear-training as a freshman requirement for a four-year college music degree. Students are required to attend live performances. (Sp)  

MUSC 179 Class Voice Major I  
Semester Prerequisite: Departmental Approval  
This course is designed to train singers in the International Phonetic Alphabet, assisting them in the pronunciation of English and foreign languages. The course focuses on English and Italian IPA skills, using the literature of major composers from the United States, Great Britain, and Italy with historical and performance emphasis. Students are required to attend live performances. (F)  

MUSC 180 Class Voice Major II  
Semester Prerequisite: MUSC 179  
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 lied and French chanson. Students are required to attend live performances. (Sp)  

MUSC 181 Class Voice Major III  
Semester Prerequisite: None  
The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. May be taken up to three semesters for credit. (Su)  

MUSC 182 Class Voice Major IV  
Semester Prerequisite: None  
The second in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)  

MUSC 183 Class Voice Major V  
Semester Prerequisite: MUSC 182  
The advanced course in a series of two. This course will refine techniques, such as breathing, posture, diction, tone production, and stage presence, introduced in MUSC 182. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)  

MUSC 187 Class Guitar I  
Semester 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. The course may be taken up to four semesters for credit. (Su)  

MUSC 188 Class Guitar II  
Semester 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. The course may be taken up to four semesters for credit. (F, Sp)  

MUSC 196 Music Appreciation  
Semester Prerequisite: None  
Designed for non-music majors, this course develops well-informed, focused listening. Students are acquainted with representative composers, compositions, and musical characteristics of a variety of style periods from early music through 20th Century music. Students are required to attend live performances. (F, Sp)  

MUSC 200 Music Fundamentals for Elementary Classroom Teachers  
Semester Prerequisite: None  
A mandatory course for elementary, special education, and early childhood majors, this course assumes little, if any, prior musical experience. The basic fundamentals of music are covered, in addition to a sampling of successful teaching methods for singing and focused listening. Performance skills are taught through the piano and recorder. (F, Sp)  

MUSC 201 Private Voice Major  
Semester Prerequisite: Audition Approval  
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. May be taken up to six semesters for credit. (F, Sp)  

MUSC 202 Private Voice Major  
Semester Prerequisite: Audition Approval  
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)
MUSC 204 - Private Woodwind Major
Semester Prerequisite: Audition Approval
This course is a private lesson. 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 206 - Private Percussion Major
Semester Prerequisite: Audition Approval
This course is a private lesson. 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 268 - Private Brass Major
Semester Prerequisite: Audition Approval
This course is a private lesson. 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 210 - Private Keyboard Major
Semester Prerequisite: Audition Approval
This course is a private lesson. 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 212 - Private Guitar Major
Semester Prerequisite: Audition Approval
This course is a private lesson. 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 213 - Private Voice Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 60 minutes per week, for non-majors. Only music, dance, or theatre majors or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F, Sp, Su)

MUSC 214 - Private Voice Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 60 minutes per week, for non-majors. Only music, dance, or theatre majors or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F, Sp, Su)

MUSC 216 - Private Strings Major
Semester Prerequisite: Departmental Approval
This course is a private lesson. 60 minutes per week, for music majors. Enrollment is by audition only. Auditions will be held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six times for credit. (F, Sp, Su)

MUSC 217 - Private Instrument Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 40 minutes per week, for non-majors. Only music, dance, or theatre majors or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F)

MUSC 218 - Private Instrument Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 50 minutes per week, for non-majors. Only music, dance, or theatre majors, or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F, Sp, Su)

MUSC 220 - Private Keyboard Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 40 minutes per week, for non-majors. Only music, dance, or theatre majors, or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F, Sp, Su)

MUSC 221 - Private Keyboard Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 60 minutes per week, for non-majors. Only music, dance, or theatre majors, or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F, Sp, Su)

MUSC 223 - Private Guitar Non-Major
Semester Prerequisite: Performing Arts Student, Departmental Approval
This course is a private lesson. 40 minutes per week, for non-majors. Only music, dance, or theatre majors, or dual enrolled and special admissions high school students are eligible to enroll. Students are required to attend live performances. (F, Sp, Su)

MUSC 227 - Independent Study
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum with minimal faculty supervision. Students must submit written application detailing their projects for department approval. Students are required to attend live performances. (F, Sp, Su)

MUSC 228 - Independent Study
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum with minimal faculty supervision. Students must submit written application detailing their projects for department approval. Students are required to attend live performances. (F, Sp, Su)

MUSC 230 - Directed Independent Study
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum. Students will meet with an assigned faculty member once per week. Students must submit written application detailing their projects for department approval. Students are required to attend live performances. (F, Sp, Su)

MUSC 231 - Directed Independent Study
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum. Students will meet with an assigned faculty member once per week. Students must submit written application detailing their projects for department approval. Students are required to attend live performances. (F, Sp, Su)

MUSC 232 - Music Seminar
Semester Prerequisite: Departmental 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
Semester Prerequisite: Departmental 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 - Music History I
Semester Prerequisite: Departmental Approval
Students will be exposed to composers and musical characteristics of specific style periods starting with Greek and Romanesque and continuing through the Renaissance. A research project will be started, with completion during the second semester. Students are required to attend live performances. (F)

MUSC 241 - Music History II
Semester Prerequisites: MUSC 240
Students will be exposed to composers and musical characteristics from the Baroque style period through the 20th century. Research project (assigned in MUSC 240) will be due during the second semester. Students are required to attend live performances. (Sp)

MUSC 244 - Studio Production Commercial
Semester Prerequisite: Departmental Approval
This course, as an introduction to multi-channel recording techniques, covers equipment functions, separation techniques, basic tracks, overdubs, and the roles of musicians, producers, and engineers in the commercial recording field. The second half of the course consists of recording session observation in an off-campus recording studio. Students are required to attend live performances. (F)
MUSC 245 Jazz History  
Semester Prerequisite: None  
Students will be introduced to the origins and traditions of the music loosely categorized as jazz. Musical styles influential in the development of jazz, such as Stride, Fugue, New Orleans, Swing, Bebop, "Free" and Avant-garde, and others, will be studied. Students are required to attend live performances. (F)

MUSC 249 Rock History I - Blues to the British Invasion  
Semester Prerequisite: None  
This course provides an overview of the elements of rock and roll, and its origins. The student will be introduced to the major figures of rhythm and blues/early rock and roll via recordings of their music. Students are required to attend live performances. (F)

MUSC 249 Rock History II - From 1953 to Present  
Semester Prerequisite: None  
Students will be introduced to the changes in pop music that have occurred since the early 50s. Developments in styles will be covered via examination of a variety of recordings from the early 60s to the present. Students are required to attend live performances. (Sp)

MUSC 251 Blues History  
Semester Prerequisite: None  
An introductory overview of the African-American musical forms known as the Blues. Using recordings of musicians as a primary source, supplemented with reading, the student will become familiar with the stylistic variations of both regional styles and individual performers. This course will show how the music changed as performers dealt with the factors of urbanization, electricity, social-cultural elements and more. Students are required to attend live performances. (Sp)

MUSC 253 Business of Music  
Semester Prerequisite: None  
An introduction to the business aspects of the music industry. Areas covered include copyrights, contracts, trademarks, publishing, recording and record company operations, personal managers, booking agents, concert promotions, and unions. Students are required to attend live performances. (F)

MUSC 254 Band Management  
Semester Prerequisite: MUSC 253/Approval  
This course is designed to assist the professional musician or manager in creating or improving a performing band. All major aspects of band management are covered, including personnel management, contracts, negotiations, format, and material choice, equipment, finances, promotion and sales, and management, and basic organizational information. Students are required to attend live performances. (Sp)

MUSC 270 Rock Guitar I  
Semester Prerequisite: None  
A presentation on fundamental rhythm and lead guitar techniques and music theory concepts applicable to rock music from its Rhythm and Blues origins to the present, as well as other related popular styles. Students must provide their own guitar. Students are required to attend live performances. (F, Sp, Su)

MUSC 273 Advanced Musicianship I  
Semester Prerequisite: MUSC 174  
This course is a continuation of the first year of training in the elements of music theory acquired in MUSC 173 and 174. The student will learn such advanced elements of harmony as modulation, Phrygian II chords, augmented sixth chords, and harmonic voice leading techniques. The basic principles of musical form will be introduced and the student will continue with more advanced training in sight-singing and ear training. Students are required to attend live performances. (F)

MUSC 274 Advanced Musicianship II  
Semester Prerequisite: MUSC 273  
After the study of classical harmony is completed and the study of basic musical form begun in MUSC 273, MUSC 274 takes up the study of the major classical forms including: variation, sonata, rondo, and concerto forms. Counterpoint and 19th century harmony as well as jazz, set theory and twelve-tone theory will be studied. Advanced training in ear training and sight-singing will continue. This course is the second in a two-course music theory and ear training sequence as a sophomore requirement for a four-year college music degree. Students are required to attend live performances. (Sp)

MUSC 275 Lyric Writing  
Semester Prerequisite: None  
This course introduces students to the craft of writing song lyrics. The work of professional songwriters as well as the students' own work will be examined and discussed. Students are required to attend live performances. (F, Su)

MUSC 280 Private Songwriting  
Semester Prerequisite: Departmental Approval  
Private coaching for music majors. 60 minutes per week, in writing and copyrighting music compositions, giving attention and suggestions in harmony, chord substitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 281 Private Songwriting  
Semester Prerequisite: Departmental Approval  
Private coaching for music majors. 60 minutes per week, in writing and copyrighting music compositions, giving attention and suggestion in harmony, chord substitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 283 Private Voice Commercial  
Semester Prerequisite: Audition Approval  
This course is a private lesson, 60 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 285 Private Instrument Commercial  
Semester Prerequisite: Audition Approval  
This course is a private lesson, 60 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit. (Su)

MUSC 287 Private Keyboard Commercial  
Semester Prerequisite: Audition Approval  
Private lesson, 60 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit. (Sp)

MUSC 289 Private Guitar Commercial  
Semester Prerequisite: Audition Approval  
Private lesson, 60 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit. (Sp)

MUSC 297 Synthesizers and Computer Music  
Semester Prerequisite: Instructor Approval  
This course introduces students to the role of computers in the music discipline. Topics include historical overview, sound synthesis techniques, synthesis hardware and software, and signal processing. Students are required to attend live performances. (F, Sp)

NURS 150 Nursing Process I: Introduction to Nursing  
Semester Prerequisite: Admission to Program  
Basic Skills Prerequisite: Math Level 1 will be Effective Beginning Spring 1997  
See Glossary Schedule  
The focus of this course is the nursing process as a problem-solving technique for meeting basic human needs. The concepts of psychosocial care and cancer are presented and the aging process is emphasized throughout. Clinicals are in nursing homes, extended care facilities, and hospitals. (F, Sp)

NURS 160 Nursing Process II: Common Acute Health Problems  
Semester Prerequisite: PHGY 262, NURS 150, NURS 290  
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 is presented. Clinical in acute care hospital systems. (F, Sp)
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NURS 165 Nursing Process III: Family Health I 5
Semester Prerequisite: NURS 160, PSYC 205. Admission to Program
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 180 Practical Nursing Role 1
Semester Prerequisite: NURS 160, NURS 165 Concurrently
Examines the role of the practical nurse, ethical and legal dimensions of practice, professional organizations, differentiated practice, nursing issues, role transition, and preparation for employment. Required to be eligible for NCLEX-PN (National Council Licensing Examination-Practical Nurse). (F, Sp)

NURS 200 Pharmacology 3
Semester Prerequisite: PHGY 202 Recommended, Admission to Program
This course is recommended for students who wish to transfer to a BSN program. Drug categories are discussed in depth as well as nursing responsibilities associated with medication administration. Students are expected to calculate drug dosages. (F, Sp)

NURS 210 LPN-RN Transition 2
Semester Prerequisite: Departmental Approval
Introduces the returning Licensed Practical Nurse (LPN) to the nursing process, patient records, role transition, and curriculum concepts. Assessment and evaluation of nursing skills will be done. (F, Sp)

NURS 260 Nursing Process IV: Family Health II 5
Semester Prerequisite: NURS 160, NURS 165, Admission to Program
The student is expected to use the nursing process in caring for clients adapting to psychosocial health problems, mental illness, and chronic conditions. Emphasis is placed on therapeutic communication skills. Clinicals are in psychiatric and maternal units of acute care hospitals. (F, Sp)

NURS 265 Nursing Process V: Family Health III 5
Semester Prerequisite: NURS 160, NURS 165, Admission to Program
Concepts of illness in children are discussed, utilizing a systems perspective. Students are expected to integrate the nursing process and concept into their care of children in hospital acute care maternity units, pediatric units, and other selected health care settings. (F, Sp)

NURS 280 Nursing Process VI: Chronic Health Problems 4
Semester Prerequisite: NURS 260, NURS 265, MICH 203, MICH 204
The student will use the nursing process in caring for adult clients adapting to chronic health problems. Client 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 Nursing Process VII: Acute/Critical Health Problems 4
Semester Prerequisite: NURS 260, NURS 265, MICH 203, MICH 204
The student will use the nursing process in caring for adult clients adapting to critical health problems. Hemorraghic changes in the neurological, cardiovascular, and respiratory systems are discussed, as well as fluid electrolyte and acid-base imbalance. Clinical experiences are in acute care hospitals. (F, Sp)

NURS 290 Nursing Process VIII: ADN as Provider and Manager of Care 3
Semester Prerequisite: NURS 280, NURS 285 Concurrently
The role of the nurse as manager of care and the role of the associate degree nurse within the discipline of nursing are presented. Students are expected to use the nursing process with various management systems within a health care system. Clinicals in acute care hospitals and nursing homes. (F, Sp)

OADM 102 Editing Business Documents 2
Semester Prerequisite: WRIT 114
This course teaches office personnel the applied editing skills for business documents and emphasizes locating and correcting errors in typing, word processing, writing, punctuation, and grammar. Grammar rules will be reviewed as needed. Classroom activities may require completion of some exercises in the computer lab. (F, Sp, Su)

OADM 104 College Gregg Shorthand I 4
Semester Prerequisite: CAB 101/CPA 10103/Placement Test
This course teaches principles of Gregg shorthand and basic business vocabulary and is offered for students who have had previous Gregg shorthand experience. A minimum performance level of 60 wpm for two minutes at 90 percent accuracy is required before advancing to Shorthand II. (F)

OADM 105 College Gregg Shorthand II 4
Semester Prerequisite: OADM 104/Equivalent
This course emphasizes skills developed in Shorthand I in addition to developing greater ability in taking and transcribing dictation. Minimum level is 60 wpm for two minutes at 90 percent accuracy. (Sp)

OADM 107 Business Calculating Machines 1
Semester Prerequisite: OADM 117/MATH 117/Previous Math
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997 (See Class Schedule)
This course utilizes the 10-key adding machine, calculator, and electronic printing calculators. Operations of addition, subtraction, multiplication, and division; plus business-type problems dealing in percentages, interest, etc. (F, Sp, Su)

OADM 110 Machine Transcription 3
Semester Prerequisite: OADM 105/OADM 100, WRIT 114/OADM 125
This course is designed for the production of readable communications by using typewriters, recorded cassettes, and an IBM PC with word processing software. Proficiency in spelling, punctuation, grammar, and business vocabulary is emphasized. (F, Sp, Su)

OADM 114 College Speedwriting 4
Semester Prerequisite: OADM 101/CPA 133/Equivalent
Students will learn an alphabetic shorthand. The minimum performance level for dictation and transcription is 70 wpm for three minutes at 96 percent accuracy. (F, Sp)

OADM 150 Certified Professional Secretaries (CPS) Review I 3
Semester Prerequisite: None
Discussion of the secretary's proficiency in office administration and communication. Executive travel, office management, records management and shorthand, written business communications, editing, abstracting, and preparing communications in the final format. (F, Sp, Su)

OADM 155 Certified Professional Secretaries (CPS) Review II 3
Semester Prerequisite: None
This course covers the basics of office technology and behavioral science. Topics include automated office systems, telecommunication, and problem solving. (F, Sp, Su)

OADM 195 Human Behavior in the Work Place 3
Semester Prerequisite: None
This course emphasizes the importance of the skill of human relations in the workplace. Through a combination of case studies, self-analysis exercises and discussion, students become more aware of the impact of positive interactions at work. Proficiency in enhancing good human relations and in handling difficult situations is assessed. (F, Sp, Su)

OADM 197 Medical Vocabulary 3
Semester Prerequisite: None
This course provides instruction in spelling, definition structure, and concepts of medical terminology using a body-systems approach. Requires good study skills. (F, Sp)

OADM 198 Medical Record Management 3
Semester Prerequisite: OADM 197
This course is a concentrated study of the health care providers, control reimbursement, legal, and quality assurance systems which affect the maintenance of the medical record in various health care delivery systems. (F, Sp)

OADM 200 Critical Thinking 3
Semester Prerequisite: None
Critical thinking is designed to provide basic and higher-order thinking skills including reasoning, creative thinking, decision-making, and problem solving. Emphasis is placed on gaining proficiency in critical awareness to enable students to confidently appraise and discriminate information, problems, issues, etc., whether in a societal, educational, or organizational setting. (F, Sp)
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OADM 201</td>
<td>General Pharmacology for Business</td>
<td>2</td>
<td>OADM 197/Equivalent</td>
<td>This overview course is designed for students in the medical secretarial, medical transcriptionist, and court and conference reporting curricula. It provides an introduction to pharmacology, its history and terminology, drug categories, and the clinical applications of common drugs by body systems. Provides experience in using several drug references. (F, Sp)</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>1</td>
<td>None</td>
<td>The topics of this course include telephone techniques, handling incoming and outgoing mail, writing certain office documents such as minutes and reports, planning meetings and travel arrangements, and interviewing. Computer usage may be emphasized. (Sp)</td>
</tr>
<tr>
<td>OADM 206</td>
<td>Legal Vocabulary and Forms Preparation</td>
<td>3</td>
<td>None</td>
<td>This course utilizes basic legal terminology in general and specialized areas of law. It defines legal terms and their use in legal context and stresses forms preparation. (F, Sp)</td>
</tr>
<tr>
<td>OADM 207</td>
<td>Medical Transcription</td>
<td>3</td>
<td>OADM 197/CHSE 121, OADM 102, Computer Experience</td>
<td>This course is designed to develop skill in defining and transcribing medical reports with the use of transcriber and microcomputer. Emphasis is on development of accuracy and knowledge of medical terminology for the transcription of medical reports. (F, Sp)</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
<td>None</td>
<td>This course includes managing the creation, protection, storage, and disposition of business records; alphabetic indexing; the foundation of other storage methods; selection of proper equipment; and procedures for the operation and control of filing methods and systems. (F, Sp, Su)</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Records and Information Management II</td>
<td>4</td>
<td>OADM 215</td>
<td>This course familiarizes students with the aspects of micrographics and the study of planning, organizing, and controlling records and information management systems. Management of both paper and electronic-based forms and documents will include design, analysis, usage, retention, and disposal procedures for manual and electronic systems. (F, Sp)</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
<td>None</td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 6</td>
</tr>
<tr>
<td>OADM 221</td>
<td>Advanced Medical Transcription</td>
<td>4</td>
<td>OADM 207</td>
<td>This course is designed to equip students with entry-level medical transcription skills. This course incorporates advanced medical terminology and actual physician dictation from a wide variety of medical specialties. (Sp)</td>
</tr>
<tr>
<td>OADM 222</td>
<td>Cardiology I</td>
<td>2</td>
<td>Admission to Program</td>
<td>Enables paramedical students to read EKG rhythm strips. It will give them background and understanding of the anatomy, physiology, electrophysiology, and pathophysiology of the heart and cardiovascular system. Much emphasis will be placed on arrhythmia interpretation, treatment modalities, and patient management. (F, Sp)</td>
</tr>
<tr>
<td>OADM 223</td>
<td>Cardiology II</td>
<td>2</td>
<td>Admission to Program</td>
<td>Provides theoretical background material for management of prehospital emergencies including assessment and management of neurological, behavioral, abdominal, metabolic, genitourinary, and multiple trauma patients. The principles of triage, management of mass casualty incidents, and telecommunications are also included. (Sp, Su)</td>
</tr>
<tr>
<td>OADM 230</td>
<td>Seminar: Special Subjects</td>
<td>.5</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>OADM 231</td>
<td>Seminar: Special Subjects</td>
<td>.75</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>OADM 232</td>
<td>Seminar: Special Subjects</td>
<td>1</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
<td>Coordinator Approval</td>
<td>This course is designed to provide on-the-job training related to an office administration major. Placement is made in an approved training station to earn credits for satisfactory work performance and to earn wages for work performed. Volunteer work may be substituted for earning wages. Minimum of 160 hours work is required. (F, Sp, Su)</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
<td>None</td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 6</td>
</tr>
<tr>
<td>OCNL 225</td>
<td>Basic Oceanology</td>
<td>4</td>
<td>2.0 Minimum in ISOT 119/Science Inventory Recommended</td>
<td>Basic Skills Prerequisite: Reading Level 4; Math Level (See Class Schedule)</td>
</tr>
<tr>
<td>PARA 221</td>
<td>Medical Trauma I</td>
<td>4</td>
<td>Admission to Program</td>
<td>Builds on previous knowledge acquired as a basic EMT. Provides theoretical background material for management of prehospital emergencies. Course includes roles and responsibilities, anatomy/physiology, airway maintenance, parental therapy, assessment and management of respiratory, maternal, neonatal, and pediatric emergencies. (F, Sp)</td>
</tr>
<tr>
<td>PARA 222</td>
<td>Medical Trauma II</td>
<td>4</td>
<td>PARA 221</td>
<td>PARA 222 incorporates previous knowledge of basic EMT and PARA 221. Provides theoretical background material for management of prehospital emergencies including assessment and management of neurological, behavioral, abdominal, metabolic, genitourinary, and multiple trauma patients. The principles of triage, management of mass casualty incidents, and telecommunications are also included. (Sp, Su)</td>
</tr>
<tr>
<td>PARA 231</td>
<td>Pharmacology I</td>
<td>2</td>
<td>Admission to Program</td>
<td>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, Sp)</td>
</tr>
<tr>
<td>PARA 241</td>
<td>Pharmacology II</td>
<td>2</td>
<td>PARA 241</td>
<td>The second course in a two-course sequence. In-depth information on ACLS drugs will be covered. Common drugs that paramedics administer in the field will also be covered. Drug classification, action, use, and side effects are included. (Sp, Su)</td>
</tr>
</tbody>
</table>
PARA 251 Skills I 3
Semester Prerequisite: Admission to Program
Provides introduction of the paramedic skills required for advanced life support and provides the opportunity to apply theory courses information to field practice in a realistic setting. Skills will be demonstrated, practiced during supervised labs, and tested for competency. Must have excellent basic EMT skills upon entry. (F, Sp)

PARA 252 Skills II 3
Semester Prerequisite: PARA 251
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, Su)

PARA 261 Clinical I 5
Semester Prerequisite: Admission to Program
Provides clinical time for paramedic students in the first semester. Time will be spent in nursing homes, hospitals including ED, CCU, ICU, Burn Unit, and OB. Time will also be spent in simulations on campus and designated EMS agencies under licensed paramedics. (F, Sp)

PARA 262 Clinical II 5
Semester Prerequisite: PARA 261
Provides clinical time for paramedic students in the second semester. Time will be spent in hospitals, including ED, CCU, ICU, Burn Unit, OB, Peds Psych Unit, OR, and Morgue. Time will also be spent in simulations on campus and designated EMS agencies under licensed paramedics. (Sp, Su)

PARA 263 Advanced Life Support 2
Semester Prerequisite: Semester I Courses
This course provides field internship with paramedic agency and testing for certification in Advanced Cardiac Life Support. (F, Sp)

PFAQ 100 Swimming: Primary Skills 1
Semester Prerequisite: None
This course focuses on the development of basic swimming strokes, rhythmic breathing, survival swimming, and beginning diving skills. (F, Sp, Su)

PFAQ 101 Swimming: Stroke Development 1
Semester Prerequisite: PFAQ 100/PFAQ 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)

PFAQ 102 Swimming: Stroke Refinement 1
Semester Prerequisite: PFAQ 101/PFAQ 101
This course builds upon the stroke development level skills. Skill development is placed on front crawl and rhythmic breathing, breaststroke, diving, and survival swimming skills. Emphasis is placed on polishing strokes and increasing swimming distances. (F, Sp, Su)

PFAQ 103 Swimming/Training 1
Semester Prerequisite: None
This course is designed for people interested in skill development in all competitive swimming strokes as well as in a fitness program design. The student should be able to swim 500 yards in 10 minutes. (F, Sp, Su)

PFAQ 105 Advanced Swimming/Training 2
Semester Prerequisite: None
This course is designed for the competitive swimmer seeking a high level of swimming. Advanced swimming/Training incorporates some dry land training and waterpolo. (F, Sp, Su)

PFAQ 106 Water Walking/Toning 1
Semester Prerequisite: None
This course utilizes a variety of walking moves in shallow water to enhance cardiovascular fitness. Toning exercises for arms, abdominal, and thighs are used extensively. (F, Sp, Su)

PFAQ 107 Water Exercise I 1
Semester Prerequisite: None
This course utilizes stationary water exercises and water games to improve cardiovascular fitness and flexibility. (F, Sp, Su)

PFAQ 108 Water Exercise II 1
Semester Prerequisite: None
This course uses stationary water exercise and an introduction to swimming techniques to improve cardiovascular fitness. Water exercises and water games are used to increase strength and flexibility. (F, Sp, Su)

PFAQ 109 Water Exercise-Plus 2
Semester Prerequisite: None
This course is an intensive water fitness exercise program designed to increase cardiovascular output and muscle strength. Students use water movements to increase flexibility and strength. (F, Sp, Su)

PFAQ 110 Hydro-Fit Exercise I 1
Semester Prerequisite: None
This course is designed to give the student an overall water fitness workout with little impact to joints or back. The class is held in deep water while exercising with Hydro-Fit weights. Participants must be comfortable in deep water. (F, Sp, Su)

PFAQ 111 Hydro-Fit Exercise II 2
Semester Prerequisite: PFAQ 110/PFAQ 110
This course is a water fitness program using water resistance to tone, strengthen, develop coordination and increase flexibility by using Hydro-Fit exercise equipment. Emphasis is placed on increasing abdominal, shoulder, and lower body strength. (F, Sp, Su)

PFAQ 112 Scuba 2
Semester Prerequisite: None
This course is a basic course in scuba diving. The course includes both classroom and pool training instruction. Upon successful completion of the class, the student is eligible for scuba certification following open water training. (F, Sp, Su)

PFAQ 113 Scuba: Advanced 2
Semester Prerequisite: PFAQ 112/PFAQ 112
This course is designed for certified divers who wish to further their scuba diving skills and knowledge. Topics covered will include diving equipment, underwater navigation, stress and rescue, limited visibility and night diving, dry suit diving, and underwater photography. Certification as an advanced and/or specialty diver is available with optional open water training. (F, Sp, Su)

PFAQ 114 Parent/Infant Water Adjustment 5
Semester Prerequisite: None
This course places emphasis on parent/infant water adjustment, safety, and fun. Emphasis is placed on development of water experiences and improvement of motor skills and coordination. (Infant ages between six months to two years.) (F, Sp, Su)

PFAQ 115 Parent/Toddler Water Adjustment 5
Semester Prerequisite: PFAQ 113/PFAQ 114
This course places emphasis on parent/toddler water adjustment, skill development, safety, and fun. Emphasis is placed on development of water experiences, improvement of motor development, coordination, and social skills. Toddlers should be two to five years old. Depending upon skill development and/or instructor approval. (F, Sp, Su)

PFAQ 116 Parent/Child Swim 5
Semester Prerequisite: PFAQ 114/PFAQ 115
This course focuses on parent/child water skill development, socialization skills and safety. Individualized instruction is given for advancement of motor skill and coordination in the aquatic environment. Children should be four to five years old and/or instructor’s approval. (F, Sp, Su)

PFAQ 117 Waterpolo 1
Semester Prerequisite: None
This course is an introduction to the basic skills of waterpolo. Students will work on passing, shooting, and dribbling skills which will then be integrated into a team concept. (F, Sp)

PFAQ 118 Arthritis Aquatics 1
Semester Prerequisite: None
This course will give the student exercises for range of motion in comfortable water temperatures and will improve and help maintain flexibility and well-being. (F, Sp)
PFAQ 119 Scuba Certification Class
Semester Prerequisite: PEAF 112/PAFCW 112/Equivalent
This course allows students who have completed scuba PEAF 112/PAFCW 112 or equivalent to complete their open water scuba certification training. Upon successful completion of the class, the student will receive Scuba Schools International's open water certification. (F, Sp, Su)

PAFCW 100 Fencing: Beginning
Semester Prerequisite: None
This course is designed to introduce the student to basic skills and theories in foil fencing. Course emphasis is placed on 12 basic skills: advance, retreat, lung, disengage, coupé, one- and two-double parry, counter parry and repose, and advance-lunge. (F, Sp, Su)

PAFCW 101 Fencing: Intermediate
Semester Prerequisite: PEAF 100/PAFCW 100
This course builds upon the 12 basic fencing skills and introduces rules and complex fencing movements. Students will use acquired skills in fencing bouts. (F, Sp, Su)

PAFCW 102 Fencing: Advanced
Semester Prerequisite: PEAF 101/PAFCW 101
This course reviews the basic skills of fencing and its rules. Students will be introduced to a sequence of fencing movements in foil fencing as well as limited use of Sabre' and Epee'. (F, Sp, Su)

PAFCW 103 Judo: Beginning
Semester Prerequisite: None
This course is designed to familiarize students with basic Judo techniques of falling, throwing, and grappling. (F, Sp, Su)

PAFCW 104 Judo: Intermediate
Semester Prerequisite: PEAF 103/PAFCW 103
This course works toward a series of sequential Judo movements with continued emphasis on throwing and grappling. (F, Sp, Su)

PAFCW 105 Karate: Beginning
Semester Prerequisite: None
This course introduces the basic skills of karate: kicking with the feet and knees and punching with the fist and hands. (F, Sp, Su)

PAFCW 106 Karate: Intermediate
Semester 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)

PAFCW 107 Karate: Advanced
Semester Prerequisite: PEAF 105/PAFCW 105
This course places primary emphasis on the development of sparring techniques as they relate to punching and kicking. Students spar and move toward the competitive aspect of karate as a martial art. (F, Sp, Su)

PAFCW 108 Weight Training: Beginning
Semester Prerequisite: None
This course is designed to promote physical fitness through weight training instruction. Inclusion will include different principles, methods, and techniques for progressive resistance training. Students will design a program of their choice with emphasis on weight reduction, muscle strengthening, and body building with an aerobic component. (F, Sp, Su)

PAFCW 109 Body Building: Introduction
Semester Prerequisite: None
This course is designed to introduce weight training and proper lifting techniques. Instruction to safety rules, proper use of machinery, and concepts of lifting will be emphasized. (F, Sp, Su)

PAFCW 110 Body Building: Beginning
Semester Prerequisite: None
This course acquaints students with the beginning aspects of body structuring through the application of weights. Emphasis on weight reduction or increase in muscle size through an individualized training program is stressed. (F, Sp, Su)

PAFCW 111 Body Building: Intermediate
Semester Prerequisite: PEAF 109/PAFCW 109
This course expands the student's ability to use machines and free weights to increase muscular strength and endurance. Students will also monitor food intake to provide information to assist with proper diet and nutritional needs. (F, Sp, Su)

PAFCW 141 Ballroom Swing I
Semester Prerequisite: None
This course introduces the study of a basic swing dance including partner techniques, dance posture, basic patterns, music, and style. The Swing dance is the most popular style of dance in the world today. (F, Sp, Su)

PAFCW 142 Ballroom Swing II
Semester Prerequisite: None
This course covers the next level of Swing dance and the following: cha-cha, rumba, mambo, merengue, salsa, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PAFCW 143 Latin Ballroom I
Semester Prerequisite: None
This course introduces an introduction to Latin dance, including partner techniques, dance posture, basic patterns, and music for Latin partner dances. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PAFCW 144 Latin Ballroom II
Semester Prerequisite: DANC 141/PAFCW 141/DANC 142/PAFCW 142
This course covers the next level of Latin dance and the following: cha-cha, rumba, mambo, merengue, salsa, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PAFCW 151 Ballroom Bronze I Workshop
Semester Prerequisite: None
This course introduces the study of ballroom dance including partner techniques, dance posture, basic patterns, and music for traditional ballroom dances including waltz, fox trot, cha-cha, rumba, and swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PAFCW 152 Latin Ballroom II
Semester Prerequisite: DANC 141/PAFCW 141/DANC 142/PAFCW 142/DANC 147/PAFCW 147
This course is designed to build on the techniques introduced in Latin Ballroom I. Latin Ballroom II, Ballroom Swing I, or Ballroom Swing II, or Ballroom Swing Topos. Emphasis will be placed on the following dance style: cha-cha, rumba, mambo, samba, salsa, merengue, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PAFCW 153 Cha-Cha/Mambo Workshop
Semester Prerequisite: None
Introduction to the Latin ballroom dances cha-cha and mambo covering basic components of partnership dancing and basic patterns of movement, footwork, technique, and style. (F, Sp, Su)

PAFCW 154 Tango/Samba Workshop
Semester Prerequisite: None
Introduction to the Latin ballroom dances tango and samba, covering basic components of partnership dancing and basic patterns of movement, footwork, technique, and style. (F, Sp, Su)

PAFCW 155 Ballroom Hustle Workshop
Semester Prerequisite: None
Designed to introduce students to hustle dance steps and styling. Emphasis is on effective partnering, mastering basic patterns, and adapting dance to various music styles. (F, Sp, Su)
PFDA 155Ballroom II
Semester Prerequisite: DANC 142/PFDA 142/Departmental Approval
This course is designed to build on the skills and techniques introduced in Ballroom I. Emphasis will be placed on the following dance styles: waltz, fox trot, cha-cha, rumba, and swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 157Ballroom III
Semester Prerequisite: DANC 152/PFDA 152/DANC 156/PFDA 156
This is an advanced course in traditional ballroom designed to build on the techniques introduced in Ballroom II, Bronze, or Latin Ballroom I. Emphasis will be placed on the following dance styles: Waltz, Fox Trot, Cha Cha, Rumba, and Swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFFT 100Total Fitness A
Semester 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, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. (F, Sp, Su)

PFFT 101Total Fitness B
Semester 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. (F, Sp, Su)

PFFT 102Total Fitness C
Semester 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, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. (F, Sp, Su)

PFFT 103Total Fitness D
Semester 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, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. (F, Sp, Su)

PFFT 104Air Ball Exercises
Semester Prerequisite: None
This course will help the student to improve spinal stabilization strength and spinal mobility, muscular strength and flexibility, balance and coordination, and generally tone and strengthen the body. (F, Sp, Su)

PFFT 105Aerobic Walking
Semester 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 106First Step to Fitness
Semester Prerequisite: None
A beginning exercise program with emphasis on increasing aerobic capacity through walking, jogging, calisthenics, and light weightlifting. (F, Sp, Su)

PFFT 107Jogging: Beginning
Semester Prerequisite: None
This course introduces jogging as a fitness modality and covers how to care for feet, proper equipment choices, clothing, and safety. (F, Sp, Su)

PFFT 108Commitment to Fitness
Semester Prerequisite: None
This course emphasizes commitment to physical fitness as it affects one's quality of life. Class activities, lectures, and discussions are aimed to introduce students to a physically active lifestyle, based on sound academic justification. Personal commitment, lifestyle modification, and willingness to experiment and change are a "prerequisite." (F, Sp, Su)

PFDA 158Ballroom II, Bronze, or Latin Ballroom I. Emphasis will be placed on the following dance styles: Waltz, Fox Trot, Cha-Cha, Rumba, and Swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 157Ballroom III
Semester Prerequisite: DANC 152/PFDA 152/DANC 156/PFDA 156
This is an advanced course in traditional ballroom designed to build on the techniques introduced in Ballroom II, Bronze, or Latin Ballroom I. Emphasis will be placed on the following dance styles: Waltz, Fox Trot, Cha-Cha, Rumba, and Swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFFT 100Total Fitness A
Semester 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, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. (F, Sp, Su)

PFFT 101Total Fitness B
Semester 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. (F, Sp, Su)

PFFT 102Total Fitness C
Semester 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, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. (F, Sp, Su)

PFFT 103Total Fitness D
Semester 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, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. (F, Sp, Su)

PFFT 104Air Ball Exercises
Semester Prerequisite: None
This course will help the student to improve spinal stabilization strength and spinal mobility, muscular strength and flexibility, balance and coordination, and generally tone and strengthen the body. (F, Sp, Su)

PFFT 105Aerobic Walking
Semester 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)

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Semester Prerequisite: None
A beginning exercise program with emphasis on increasing aerobic capacity through walking, jogging, calisthenics, and light weightlifting. (F, Sp, Su)

PFFT 107Jogging: Beginning
Semester Prerequisite: None
This course introduces jogging as a fitness modality and covers how to care for feet, proper equipment choices, clothing, and safety. (F, Sp, Su)

PFFT 108Commitment to Fitness
Semester Prerequisite: None
This course emphasizes commitment to physical fitness as it affects one's quality of life. Class activities, lectures, and discussions are aimed to introduce students to a physically active lifestyle, based on sound academic justification. Personal commitment, lifestyle modification, and willingness to experiment and change are a "prerequisite." (F, Sp, Su)
PFHW 108 Emergency Services Health Awareness  
Semester Prerequisite: Emergency Services Student  
Emergency services health awareness introduces the future emergency services student to health and wellness issues. This information includes changing attitudes/lifestyles, issues of prevention, techniques for management of health, and more. (F, Sp, Su)

PFHW 109 Emergency Services Fitness I  
Semester Prerequisite: Emergency Services Student  
The 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)

PFHW 110 Emergency Services Fitness II  
Semester Prerequisite: Emergency Services Student  
A continuation of PFHW/FEAK 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)

PFHW 111 Emergency Services Fitness III  
Semester Prerequisite: Emergency Services Student  
A continuation of PFHW/FEAK 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)

PFHW 112 Emergency Services Fitness IV  
Semester Prerequisite: Emergency Services Student  
A continuation of PFHW/FEAK 111. 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)

PFHW 123 Human Nutrition  
Semester Prerequisite: Biology Recommended  
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 controversal topics when relevant. Such topics can include fad diets, obesity, nutrition of athletes, food labels, alcohol, sugar, and food additives. (F, Sp)

PFHW 131 Osteoporosis Prevention I  
Semester Prerequisite: None  
This course introduces the student to principles that can aid in the prevention of osteoporosis. The student will learn risk factors, nutritional information, and progressive strength and flexibility exercises related to osteoporosis prevention. (F, Sp, Su)

PFHW 132 Osteoporosis Prevention II  
Semester Prerequisite: HFWE 131/PFHW 131  
This course continues the focus on osteoporosis prevention. The student will continue progressive strength and flexibility exercises, current research, and nutrition information. (F, Sp, Su)

PFHW 145 Nutrition: Critical Issues  
Semester Prerequisite: None  
This course introduces the student to nutrition and its role in promoting better health. The student will learn concepts and controversies in nutrition including vitamin supplements, natural foods, and other related topics. (F, Sp, Su)

PFHW 146 Choice for Change Weight Control Program  
Semester Prerequisite: None  
This course introduces the student to a weight management program that follows the American Dietetic guidelines. The student will learn the principles of nutritionally sound low-fat eating and the necessity of regular exercise for permanent weight loss. (F, Sp, Su)

PFHW 146 Staying on Track: Lifelong Weight Management  
Semester Prerequisite: None  
A continuation of the principles of Choice for Change Weight Control Program. The student will focus on the behavioral aspects of eating, better techniques for weight management, and changing behavior through awareness. (F, Sp, Su)

PFHW 149 Cholesterol Management  
Semester Prerequisite: None  
This course introduces the student to a dietary program that can assist in lowering cholesterol levels. The student will learn ways to identify high cholesterol and saturated fat foods substituting them with a practical, nutritionally- sound food plan. (F, Sp, Su)

PFHW 161 Self-Awareness: Key to Wellness  
Semester Prerequisite: None  
This course introduces the student to aspects of self-awareness that can lead to greater visibility in all aspects of life. The student will learn ways in which he or she is influenced by family and cultural beliefs. Tools for changing behavior will be presented. (F, Sp, Su)

PFHW 163 Healthy Lifestyles  
Semester Prerequisite: None  
This course introduces the student to lifestyle skills that lead to better health. The student will learn healthful nutritional habits, basic fitness concepts, positive stress reduction, and development of a personalized healthy Lifestyle plan. Assessment skills and wellness concepts will be put into practice. (F, Sp, Su)

PFHW 167 The Consumer and Health Issues  
Semester Prerequisite: None  
This course introduces the student to the study of health from a holistic perspective—seeing life as a total system. The student will learn awareness and tools for the "triangle of health" including the physical, mental, and spiritual. Alternatives in health care will be examined. (F, Sp, Su)

PFHW 168 Un-smoking for Life  
Semester Prerequisite: None  
This course introduces the student to the habit patterns, and health effects of smoking. The student will learn ways to permanently stop smoking and will gain information to make healthy lifestyle choices. (F, Sp, Su)

PFHW 169 Fit for Life Exercise  
Semester Prerequisite: None  
This course introduces the student to the benefits of regular exercise to combat the debilitating effects which inactivity has upon aging. The student will learn the benefits of cardiovascular exercise as well as flexibility, mobility, and range of motion. (F, Sp)

PFHW 180 Positive Approaches to Stress  
Semester Prerequisite: None  
This course introduces the student to the role stress has in our lives physically, emotionally, and mentally. The student will learn to identify his or her own stress styles and become aware of options with coping techniques. (F, Sp)

PFHW 181 Stress Management  
Semester Prerequisite: None  
This course introduces the student to the nature of stress, how it affects us, and techniques to handle it. The student will learn to develop individualized strategies to deal with his or her stress and increase overall health. (F, Sp, Su)

PFHW 182 Stress Management for Parents  
Semester Prerequisite: None  
This course introduces the student to effects of stress in children-rearing for children care providers and parents. The student will gain an understanding of how stress influences family relationships and learn techniques to apply to daily life. (F, Sp, Su)

PFHW 251 Adult Lifestyles Exercise  
Semester Prerequisite: Fitness Evaluation. Departmental Approval  
An opportunity for students to maintain and/or improve their fitness level through supervised aerobic exercise sessions and health education. Emphasis is on regular, safe exercise, and healthy lifestyles. (F, Sp, Su)

PFIS 100 Bowling: Beginning  
Semester Prerequisite: None  
This course is a basic introduction to bowling. Primary emphasis is placed on spot pitching, release, and approach. Students become familiar with bowling etiquette and scoring. (F, Sp, Su)

PFIS 101 Bowling: Intermediate  
Semester Prerequisite: None  
This course develops further strategies in spot bowling, consistent ball release, and scoring strategies. (F, Sp, Su)

PFIS 102 Bowling: Advanced  
Semester Prerequisite: PEAC 101/PFIS 101  
This course is an intensive review of skills introduced at the beginning and intermediate levels. Students develop strategies in tenpin bowling. (F, Sp, Su)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFIS 103</td>
<td>Golf: Beginning</td>
<td>1</td>
<td>None</td>
<td>This course is an introduction to the basics of golf which include equipment, grip, stance and posture, club swing, and the rules and etiquette of golf. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 104</td>
<td>Golf: Advanced/Beginning</td>
<td>1</td>
<td>None</td>
<td>This course will provide continuation of the development of grip, stance, and club swing. Visualization and imagery will be introduced in relation to the golf swing. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 105</td>
<td>Golf: Intermediate</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 108</td>
<td>Pool: Beginning</td>
<td>1</td>
<td>None</td>
<td>This course introduces students to the fundamentals of pool (pool billiards). A primary course emphasis is on stance, grip, bridge, aim, and stroke. Cue ball position shots such as stop, cilllow, draw, and center are covered. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 109</td>
<td>Pool: Intermediate</td>
<td>1</td>
<td>None</td>
<td>This course reviews the fundamentals of stance, grip, bridge, aim, and stroke. Skill improvement and concentration techniques are stressed. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 111</td>
<td>Table Tennis: Beginning</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 112</td>
<td>Table Tennis: Intermediate</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 113</td>
<td>Competitive Table Tennis</td>
<td>1</td>
<td>PEAC 112/PFIS 112</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 115</td>
<td>Tennis: Beginning</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 116</td>
<td>Tennis: Intermediate</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 117</td>
<td>Tennis: Advanced</td>
<td>1</td>
<td>None</td>
<td>This course deals with developing good ball control, court position, topspin shots, and serve/serve shots. A student should be able to demonstrate and execute the following tennis skills: solid ground strokes, net volleys, lobs, and good control of the serve. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 118</td>
<td>Bicycling/Touring</td>
<td>1</td>
<td>None</td>
<td>This course deals with emergency repairs, proper fit of bicycle, good cycling techniques, and safe use of roads. Students are shown a variety of routes suitable for bicycling in the Lansing area. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 119</td>
<td>Bicycling Camping/Touring</td>
<td>1</td>
<td>None</td>
<td>This course is a two-day self-contained bicycle trip in a scenic area of Michigan. Participants carry on their bicycles all gear and items needed for the entire trip. Students will cycle 45-50 miles each day. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 120</td>
<td>Tai Chi I</td>
<td>1</td>
<td>None</td>
<td>This course introduces the first 30 forms of the Yang-style Tai Chi. Students develop techniques to foster relaxation and inner calmness. Slow movements train the mind to be in better control of the body. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 121</td>
<td>Tai Chi II</td>
<td>1</td>
<td>PEAD 104/PEAD 120</td>
<td>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)</td>
</tr>
<tr>
<td>PFIS 122</td>
<td>Aikido</td>
<td>1</td>
<td>None</td>
<td>This course is an introduction to the philosophy of Aikido. Basic movements of Aikido as a martial art are introduced. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 123</td>
<td>Aikido Continuing</td>
<td>1</td>
<td>PEAD 107/PEAD 122</td>
<td>This course presents the 6th KYU forms through the 3rd KYU techniques. This course examines the philosophical underpinnings of Aikido. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 124</td>
<td>Yoga: Beginning</td>
<td>1</td>
<td>None</td>
<td>This course is an introduction to yoga breathing and gentle yoga stretching exercises with emphasis in guided relaxation and meditation. Psycho-acoustic music is used to reduce stress and tension. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 125</td>
<td>Yoga: Continuing</td>
<td>1</td>
<td>None</td>
<td>This course promotes psycho-physiological integration of body and mind through yoga breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 126</td>
<td>Yoga: Special</td>
<td>1</td>
<td>None</td>
<td>This course promotes psycho-physiological integration of body and mind through yoga breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 127</td>
<td>Parent/Child Gymnastics Tumbling I</td>
<td>.5</td>
<td>None</td>
<td>This course introduces basic tumbling skills to work toward greater motor skill development through tumbling, stretching, balancing skills, and controlled movement. (F, Sp)</td>
</tr>
<tr>
<td>PFIS 128</td>
<td>Parent/Child Gymnastics Tumbling II</td>
<td>.5</td>
<td>PEAD 116/PEAD 127</td>
<td>This course introduces children to elementary combinations of movements to enhance flexibility, strength, and coordination. Children learn basic tumbling and floor balance beam. (F, Sp)</td>
</tr>
<tr>
<td>PFIS 129</td>
<td>Ice Skating</td>
<td>1</td>
<td>None</td>
<td>This course acquaints students with ice skating as a leisure time activity. Points of emphasis in the course are proper fit and care of figure skating boots and blades, basic skating terminology and technique, proper posture, and control on ice. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 130</td>
<td>Racewalk Technique</td>
<td>1</td>
<td>None</td>
<td>This course is designed to build one's basic walking skills into a racewalking stride for fitness or racing. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 131</td>
<td>Seminar: Special Subjects</td>
<td>1</td>
<td>None</td>
<td>Seminars are designed to meet specific community needs. (F, Sp, Su)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
<td>Prerequisites</td>
<td>Description</td>
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<tr>
<td>PFIS 132</td>
<td>Seminar: Special Subjects</td>
<td>2</td>
<td>None</td>
<td>Seminars are designed to meet specific community needs. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 133</td>
<td>Seminar: Special Subjects</td>
<td>3</td>
<td>None</td>
<td>Seminars are designed to meet specific community needs. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 134</td>
<td>Theory and Practice of Yoga</td>
<td>2</td>
<td>Prerequisite: PEAD 110/PFIS 124/Departmental Approval</td>
<td>This class explores the theoretical foundations and practical application of yoga and its historical framework. Lecture, discussion, and in-class practice will provide participants with an opportunity to deepen their understanding of yoga theory and how it pertains to their daily practice. Students will explore yoga exercises and relaxation practices to promote health and fitness through stress reduction. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 135</td>
<td>Physical Fitness Seminars</td>
<td>5</td>
<td>None</td>
<td>Seminars are designed to meet specific course needs. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 201</td>
<td>Independent Study</td>
<td>1</td>
<td>None</td>
<td>This course is a directed research project in the areas of physical education, recreation, or athletics. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 202</td>
<td>Independent Study</td>
<td>2</td>
<td>None</td>
<td>This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 203</td>
<td>Independent Study</td>
<td>3</td>
<td>None</td>
<td>This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 204</td>
<td>Independent Study</td>
<td>4</td>
<td>None</td>
<td>This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 105</td>
<td>Angling: Beginning</td>
<td>1</td>
<td>None</td>
<td>This course is an introduction to the sport of angling with demonstrations of basic angling technique. Information is provided on Michigan sport fish and their habitat. The class will take fishing trips for steelhead, walleye, salmon, trout, and other game fish. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 107</td>
<td>Angling: Advanced</td>
<td>1</td>
<td>Prerequisite: PEAD 105/PFIS 105</td>
<td>This course is designed to improve the angler's skills and knowledge of fish habitats. Many sophisticated angling techniques will be discussed. Weekly fishing trips for Michigan's premier game fish are scheduled. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 110</td>
<td>Seminar: Wilderness Survival Techniques</td>
<td>3</td>
<td>None</td>
<td>This course provides basic outdoor survival skills and techniques to campers, outdoor enthusiasts, and group leaders. Among the topics are shelter, fire, water, signals, orienteering, food procurement, hot/cold stress management, toxic bites, edible plants of the world, and survival at sea. Optional three-day field trip. Exercise (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 111</td>
<td>Seminar: Wild Food Plants</td>
<td>3</td>
<td>None</td>
<td>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 from other native plants. The material is illustrated in slides and handouts. Several outdoor experiences are provided. Conservation stressed. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFIS 115</td>
<td>Sailing: Beginning</td>
<td>1</td>
<td>None</td>
<td>This course is an introduction to basic sailing on Lake Michigan. Students will become familiar with the parts and functions of a sailing vessel. Students will be taught rigging procedures, use of wind, and other basic sailing functions. (F, Sp, Su)</td>
</tr>
<tr>
<td>PFPA 116</td>
<td>Basic Sailing/Cruising</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>This course will help students gain first-hand experience in the art of sailing and seamanship. Students will attain confidence necessary to handle a cruising sailboat under various conditions which present themselves in the Great Lakes. (Sp, Su)</td>
</tr>
<tr>
<td>PFPA 117</td>
<td>Advanced Sailing</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>This course is designed to provide the student an opportunity to experience a major voyage on the Great Lakes applying the terms and course objectives covered in the introductory cruising class. Major emphasis will be placed on advanced piloting and helmsmanship. (Sp, Su)</td>
</tr>
<tr>
<td>PFPA 118</td>
<td>Windsurfing</td>
<td>1</td>
<td>Prerequisite: Ability to Swim</td>
<td>This is an entry-level course designed to provide the student with the knowledge and experience to safely sail and windsurf in protected waters during moderate weather conditions. Windsurfers and life jackets are provided. Classes are conducted at the MSU Sailing Club on Lake Lansing. (F, Sp, Su)</td>
</tr>
<tr>
<td>PPFR 103</td>
<td>Athletic Training I</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>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)</td>
</tr>
<tr>
<td>PPFR 104</td>
<td>Athletic Training II</td>
<td>2</td>
<td>Prerequisite: PEAD 103/PPFR 103</td>
<td>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)</td>
</tr>
<tr>
<td>PPFR 105</td>
<td>Psychology of Coaching</td>
<td>1</td>
<td>Prerequisite: None</td>
<td>This course is a comprehensive introduction to the art and science of coaching, and the art of positive coaching philosophy. (F, Sp, Su)</td>
</tr>
<tr>
<td>PPFR 107</td>
<td>Officiating Basketball</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>This course is an officiating mechanics class for students wishing to officiate basketball at the high school and college level. Proper court positioning, signal use, and whistle use are topics covered. (F, Sp, Su)</td>
</tr>
<tr>
<td>PPFR 109</td>
<td>Coaching Basketball</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>This course is designed to prepare the student for coaching the technical aspects of basketball as well as to enhance the student's knowledge of the duties, roles, and responsibilities of the coach. Material will apply to all levels of competition with emphasis placed on high school and college levels. (F, Sp)</td>
</tr>
<tr>
<td>PPFR 111</td>
<td>Coaching Volleyball</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>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)</td>
</tr>
<tr>
<td>PPFR 112</td>
<td>Coaching Soccer</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>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)</td>
</tr>
<tr>
<td>PPFR 113</td>
<td>Rules of Golf</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>This course examines the rules of golf through the interpretations of the United States Golf Association's deciders. (F, Sp)</td>
</tr>
<tr>
<td>PPFR 114</td>
<td>Basic Lifeguarding</td>
<td>1</td>
<td>Prerequisite: None</td>
<td>This course is designed to provide the necessary minimum skills of training to qualify as an entry-level lifeguard. (F, Sp)</td>
</tr>
<tr>
<td>PPFR 115</td>
<td>Lifeguard Training</td>
<td>2</td>
<td>Prerequisite: None</td>
<td>This course is designed to provide the necessary minimum skills training for a person to qualify as a non-surf lifeguard. (F, Sp)</td>
</tr>
</tbody>
</table>
PFPR 116 Water Safety Instruction  2
Semester Prerequisite: None
This course is designed to assist in teaching basic aquatic skills for instructors.
Teaching modalities and how different students learn is covered. (F, Sp)

PFTS 100 Basketball: Beginning  1
Semester Prerequisite: None
This course introduces the student to the fundamental skills of basketball. Course
emphasis is placed on ball handling, passing, shooting, and rules. (F, Sp, Su)

PFTS 101 Basketball: Woman  1
Semester Prerequisite: None
This course is designed for women who has a sound understanding of bas-
ketball skills. Drills will be used to enhance passing and shooting skill develop-
ment. Emphasis is placed on team play as well as individual skill improvement. (F, Sp, Su)

PFTS 102 Basketball: Advanced  1
Semester Prerequisite: None
This course introduces the student to the fundamental skills of volleyball. Course
emphasis is on proper serving, setting, forearm passing, spiking, positioning,
rules, and game strategy. (F, Sp, Su)

PFTS 103 Volleyball: Beginning  1
Semester Prerequisite: None
This course introduces the student to the fundamental skills of volleyball. Course
emphasis is on proper serving, setting, forearm passing, spiking, positioning,
rules, and game strategy. (F, Sp, Su)

PFTS 104 Volleyball: Intermediate  1
Semester Prerequisite: PFAS 103/PFTS 103
This course emphasizes the development of proper serving, setting, forearm pass-
ing, and spiking skills. Game strategies and player positioning are taught in more
detail. (F, Sp, Su)

PFTS 108 Competitive Intermediate Volleyball  2
Semester Prerequisite: PFTS 105
This course provides the student with a conceptual framework for advanced offen-
sive and defensive systems of play. Individual work on skill drills and intra-class
competition. (F, Sp, Su)

PFTS 107 Indoor Soccer  1
Semester Prerequisite: None
This course is designed to introduce students to the basics of indoor soccer and
to improve the level of understanding the game through instructions and dis-
cussions. Passing and shooting drills are emphasized along with team play concept.
Modifications to soccer rules are used to accommodate indoor soccer rules and
safety. (F, Sp, Su)

PFTS 108 Indoor Soccer Team Competition: Men  1
Semester Prerequisite: None
This course provides the students with concepts, strategies, and framework of
team effort to compete successfully in a competitive soccer environment via intra-
class team competition similar to indoor soccer leagues. (F, Sp, Su)

PFTS 109 Indoor Soccer Team Competition: Women  1
Semester Prerequisite: None
This course provides the students with concepts, strategies, and framework of
team effort to compete successfully in a competitive soccer environment via intra-
class team competition similar to indoor soccer leagues. (F, Sp, Su)

PFTS 110 Softball: Beginning  1
Semester Prerequisite: None
This course introduces the student to the fundamental skills of softball. Course
emphasis is on proper throwing, catching, fielding, and hitting procedures. (Sp, Su)

PHGY 202 Human Physiology  4
Semester Prerequisite: 2.0 Minimum in ANAT 201
Basic Skills Prerequisite: Reading Level 5
The physiology, regulation, and biochemistry of the various organ systems in the
human body is presented along with the integration of body function. Emphasis is
on normal function, but clinical aspects may be discussed when appropriate.
Laboratory topics complement the lecture. (F, Sp, Su)

PHL 151 Introduction to Logic and Critical Thinking  4
Semester Prerequisite: None
Introduction to modern logic and elements of reasoning, with special attention
given to formal languages, deductive reasoning, and inductive arguments,
recognizing levels of meaning and interpreting world views (Wesensschauungen), analyzing truth-functional relations, avoiding fallacious rea-
soning or misleading language, and using logical skills in everyday life. (F, Sp, Su)

PHL 152 Introduction to Ethics  4
Semester Prerequisite: None
Designed to explore essential requirements for moral reasoning and to call atten-
tion to the fact that foundation as well as the traditional criteria utilized for value
judgments. Major ethical theories will be discussed along with their applications
to everyday situations. The course will include cross-cultural references, when
appropriate. (F, Sp, Su)

PHL 153 Knowledge and Reality  4
Semester Prerequisite: None
Select issues from classical and contemporary philosophy provide an introduction
to the philosophical problems of knowledge. Emphasis will be placed on how
knowledge claims and the relationship between the knower and what is knows. (F)

PHL 211 World Philosophies I  4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Surveys major developments in the history of knowledge, reality, ethics, and
society, and their historical role in shaping cultures and human identity. Covers ancient, Hindu, Buddhist, Islamic, and European thought from mythic
beginnings to the period of early scientific reasoning. (F)

PHL 212 World Philosophies II  4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Surveys major developments in the history of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers European, Asian, African, Native American, and American pragmatic thought from the sci-
icentric revolution to contemporary global concerns. (Sp)

PHL 250 Contemporary Ethical Problems  4
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This is an advanced course designed to examine contemporary moral issues
which arise through technological and social developments. It will explore the lim-
its of traditional ethical theories and discuss the possible adaptation to a changing
world. Where appropriate, course includes issues of cross-cultural importance
which involve multicultural concerns. (Sp)

PHL 295 Independent Study  1
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in philosophy. Students will
involves 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)

PHL 296 Independent Study  2
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in philosophy. Students will
involves 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)

PHN 108 Introduction to Phonics  4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2; Writing Level 2
Explores relationship of English language sounds to their corresponding printed
alphabetical letters and letter combinations. Examines rules governing variations in
these sounds, the process of syllabification, accent, the dictionary pronunciation
system, structural analysis of words, and the relationship of phonics to reading
and spelling. (F, Sp, Su)

PHYS 200 Applied Physics  4
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level (See Class Schedule)
This course includes basic principles of construction, electronics, electrote, civil,
hydraulics, metal working, heating, and air conditioning technologies as they relate
to the physical sciences. Provides basic training in fundamental physical phenomena
and simple machines with emphasis put on their application to practical shop
and field problems. (F, Sp)
PHYS 201 Introductory Physics I
Semester Prerequisite: A 2.0 Minimum in MATH 122
Basic Skills Prerequisite: Math Level (See Class Schedule)
First in a two-semester sequence of algebra-based physics courses designed to present the fundamental principles of physics, emphasizing applications to other fields. Topics include mechanics, solids and fluids, heat, and alternative energy sources and technologies. Demonstrations and hands-on activities complement the lecture topics. (F, Sp, Su)

PHYS 202 Introductory Physics II
Semester Prerequisite: A 2.0 Minimum in PHYS 201
Continuation of PHYS 201. Topics include electricity and magnetism, vibrations and waves, sound, light and optics, modern physics, quantum physics, elementary particles, relativity, and cosmology. Demonstrations and hands-on activities and projects complement the lecture topics. (F, Sp, Su)

PHYS 215 Physics I: Mechanics
Semester Prerequisite: A 2.0 Minimum in MATH 151
First in a three-semester sequence of calculus-based physics courses for science and engineering students. Topics include vector algebra, Newtonian mechanics, kinematics and dynamics, momentum and energy, conservation laws of energy and momentum, rotational motion, static equilibrium, gravitation and oscillations. Integrated special topics may include relativity, nuclear physics, and thermodynamics. (F, Sp, Su)

PHYS 216 Physics II: Electromagnetism, Waves, and Optics
Semester Prerequisite: A PHYS 152, PHYS 215 2.0 Minimum
Second in a three-semester sequence of calculus-based physics courses for science and engineering students. Topics include electric and magnetic forces and fields, electromagnetic energy, currents and circuits, electromagnetic oscillations and waves, mechanical waves and sound, light waves, and physical and geometrical optics. (F, Sp, Su)

PHYS 225 Physics I Laboratory
Semester Prerequisite: PHYS 201/Concurrent
PHYS 215/Concurrent/Equivalent
Laboratory course which complements PHYS 1. Experiments include investigations in mechanics and heat. The lab is intended to increase students' knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects. (F, Sp, Su)

PHYS 226 Physics II Laboratory
Semester Prerequisite: PHYS 202/Concurrent
PHYS 216/Concurrent/Equivalent
Laboratory course which complements PHYS 2. Experiments include investigations in electromagnetism, sound, and light. 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)

POL 120 American Political System
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 3
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)

POL 121 State and Local Government
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 3
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)

POL 140 Politics in Global Perspective
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 4
Surveys the development, behavior, and future prospects of government throughout the world. Examines the effects of political regimes to unify diverse populations. Describes the causes of political conflict over culture, territory, ethnicity, and wealth. Analyzes democracy as a strategy for resolving conflict and making decisions. (F, Sp, Su)

POL 200 Political Behavior
Semester Prerequisite: None
This introductory course examines the theories and concepts of political science and the methodology used by political scientists to analyze and understand American politics. Special emphasis is placed on political institutions and the relationships of those involved in the political process. (Sp)

POL 205 Government Internship
Semester Prerequisite: Departmental Approval
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city to township through the federal level. (F, Sp, Su)

POL 206 Advanced Government Internship
Semester Prerequisite: Departmental Approval
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city to township through the federal level. (F, Sp, Su)

POL 230 Sex Roles and Political Change in a Post-Industrial Society
Semester Prerequisite: None
An exploration of change in sex roles and family structure in response to changing economic, social, and political forces. Topics to be covered include sex role socialization, divorce and remarriage, and social changes in the economy, politics, and the military. The course examines a variety of perspectives within the social sciences. (Sp)

POL 240 Introduction to Public Policy
Semester Prerequisite: None
This course will provide an analysis of political and organizational processes which influence the formulation and implementation of public policy. Special attention will be given to the formulation, implementation, and evaluation of various selected public policies. Further, the course is intended to develop some skills for the evaluation and design of policies. (Sp)

POL 250 American Political Parties and Interest Groups
Semester Prerequisite: None
Emphasizes the origins, structure, and functions of political parties, examines the American political system in terms of citizen 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)

POL 260 Comparative Political Systems
Semester Prerequisite: None
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)

POL 270 International Relations
Semester Prerequisite: None
A course in contemporary international relations, with emphasis on politics. Concepts, theories, and methodological approaches are used to analyze the relationship between international politics and U.S. foreign and domestic policy. (Sp)

POL 290 Supreme Court and Landmark Decisions
Semester Prerequisite: None
An analysis of the United States Supreme Court. Particular emphasis will be devoted to Supreme Court decision-making. A number of landmark Supreme Court decisions will be reviewed from historical, political, public policy, institutional, and behavioral perspectives. (F)

POL 295 One-Credit Independent Study in Political Science
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)
POLS 295 Two-Credit Independent Study in Political Science 2
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

POLS 297 Three-Credit Independent Study in Political Science 3
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

PSYC 175 Psychology of Death: A Preparation for Living 3
Semester Prerequisite: None
Examines psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include the dying process, suicide, death anxiety, children's concept of death, care of the dying, ethical decisions, social issues and considerations, near death experiences, and the grieving process. (Sp)

PSYC 165 Children and Death: Grief and Loss 2
Semester Prerequisite: None
This course will provide a theoretical base and concrete tools to work with children in the grieving process. Students will explore their personal awareness of death as well as children's developmental issues as survivors and terminal patients. (F, Sp)

PSYC 195 Biofeedback 3
Semester Prerequisite: None
An understanding of the link between stress and illness with application of biofeedback instruments to achieve stress reduction. Also covered are: relaxation techniques, progressive relaxation, meditation, guided imagery visualization, and burn-out prevention. Students will use instruments in the lab for personal stress reduction. (Sp)

PSYC 200 Introduction to Psychology 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4, Writing Level 2
The basic orientation to the field of psychology, designed as a general survey and as preparation for advanced courses in the field. Topics include methods, nervous systems, sensation, perception, development, learning, motivation, emotion, cognition, personality, abnormality, therapy, and social behavior. (F, Sp, Su)

PSYC 202 Psychology of Personality 3
Semester Prerequisite: PSYC 200
Discussion of concepts of adjustment, conflict, mental processes, and behavior modification. Survey of learning theories of personality, emphasizing their implications for assessing and modifying normal personality. (F, Sp, Su)

PSYC 203 Social Psychology 3
Semester Prerequisite: PSYC 200
A theoretical and empirical approach to understanding individual and social behavior. Examines the person and the social environment with a focus on attitudes, interpersonal behavior, and group processes. (F)

PSYC 204 Educational Psychology 3
Semester Prerequisite: PSYC 200
An investigation of the contribution of psychology to education. Emphasis will be placed upon aspects of child growth and development, motivation, learning, measurement, and group dynamics that affect the achievement of pupils in the classroom. (F, Sp, Su)

PSYC 205 Human Growth and Development 3
Semester Prerequisite: PSYC 200
A study of the human life cycle from conception to death. Designed to investigate, describe, and explain changes in the physical, social, emotional, and cognitive areas that are a result of the continuous interaction of maturation and experience. (F, Sp, Su)

PSYC 209 Cognitive Psychology 3
Semester Prerequisite: PSYC 200
Cognitive psychology is the study of the human mind, its domain includes questions concerning how people perceive the world, remember information, use knowledge, understand language, learn, reason, and solve problems. (Sp)

PSYC 210 Biological Psychology 3
Semester Prerequisite: PSYC 200, Science Course
Biological psychology is an integration of physiology, psychology, and several other related disciplines. The course provides an in-depth exploration of the brain and the relation between it and behavior. Specific topics include sensory processing, learning and memory, sleep and disorders, and disorders of depression and schizophrenia. (Sp)

PSYC 211 Child Psychology 3
Semester Prerequisite: PSYC 200
Explores theories and principles of child development from conception to puberty. The course covers psychological, sociological, and biological aspects of maturation and development. (F, Sp, Su)

PSYC 222 Adolescent Psychology 3
Semester Prerequisite: PSYC 200
Examines theoretical and empirical literature related to adolescence, emphasizing biological, psychological, and sociological aspects of maturation and development from puberty to young adulthood. (Sp)

PSYC 240 Psychology of Human Sexuality 3
Semester Prerequisite: PSYC 200
An exploration of psychological aspects of human sexuality, including research methods, response, identity, development, attraction and intimacy, communication, orientation, attitudes, diseases, and disorders. (Sp)

PSYC 250 Abnormal Psychology 3
Semester Prerequisite: PSYC 200
A survey of the nature, development, diagnosis, and treatment of psychopathology viewed from a general systems perspective (psychological, sociological, and biological). Major theories of causes, scientific research, and diagnostic and therapeutic techniques are studied with respect to various psychological disorders. (F, Sp)

PSYC 295 One-Credit Independent Study in Psychology 1
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

PSYC 296 Two-Credit Independent Study in Psychology 2
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

PSYC 297 Three-Credit Independent Study in Psychology 3
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specified academic goals. (F, Sp, Su)

PVA 281 Property Valuation and Assessment Administration I 3
Semester Prerequisite: None
An introductory course presenting the Michigan property tax system, basic property valuation concepts, property descriptions, eminent domain, land economics, tax mapping, and aerial photograph interpretation. (F)

PVA 282 Property Valuation and Assessment Administration II 3
Semester Prerequisite: PVA 281/Departmental Approval
Presents concepts of residential and agricultural appraisals and soil survey. (Sp)

PVA 283 Property Valuation and Assessment Administration III 3
Semester Prerequisite: PVA 282/Departmental Approval
Commercial and industrial appraisals are presented. Valuation and auditing procedures relevant to personal property are also explained. (F)

PVA 284 Property Valuation and Assessment Administration IV 3
Semester Prerequisite: PVA 283/Departmental Approval
Topics covered include Michigan property tax law, local government financing, assessment/equalization cycle, allocation, and millage rollback computations. (Sp)
PVA 286  Applied Appraisal Concepts I  
Semester Prerequisite: PVA 281; PVA 282/Departmental Approval
Field inspection and appraisal of residential, commercial, and industrial properties. Emphasis is on potential appraisal problems utilizing the cost approach to value. (Su)

PVA 287  Applied Appraisal Concepts II  
Semester Prerequisite: PVA 282/Departmental Approval
Field inspection and appraisal of commercial and industrial properties which emphasize potential appraisal problems using the cost approach to value. (Su)

PVA 288  Income Approach to Value I  
Semester Prerequisite: PVA 282/REAL 279
This course introduces the advanced student to the appraisal concepts utilized in the appraisal of income-producing properties. (F)

PVA 289  Income Approach to Value II  
Semester Prerequisite: PVA 288
Advanced study of the appraisal concepts utilized in the appraisal of income-producing properties. (Sp)

QUAL 100  Introduction to Quality Assurance  
Semester Prerequisite: None
This course explores the historical evolution of total quality management and introduces the concepts of consistent improvement and process control. Current quality control theories from both service and manufacturing environments are examined. (F, Sp)

QUAL 103  Probability and Statistics for Quality Assurance  
Semester Prerequisite: None
This course introduces the student to basic statistics and quality as related to quality assurance. Material covered includes probability concepts, counting techniques, binomial distribution, hypergeometric distribution, normal distribution, process capability concepts, distribution of averages, and alpha and beta errors. (F, Sp)

QUAL 105  Control Charts and Problem Solving I  
Semester Prerequisite: QUAL 103
This course introduces the student to the theory, application, selection, and implementation of both variable and attribute control charts. It also covers the basic problem-solving techniques used in quality assurance. (F, Sp)

QUAL 115  Metrology I  
Semester Prerequisite: QUAL 103/Approval
Introduces the student to the theory, use, and application of conventional and digital precision instrumentation. Designed to fulfill the needs of quality assurance and skilled trades students requiring a foundation in metrology. (F)

QUAL 118  Metrology II  
Semester Prerequisite: QUAL 115
Introduces the student to advanced instrumentation and its applications. The student will learn to utilize the optical comparator, laser micrometer, surface tester, and the coordinate measurement machine to accomplish evaluation of lab projects. (Sp)

QUAL 121  Introduction to Statistical Process Control  
Semester Prerequisite: None
This course provides an introduction to statistical process control (SPC), philosophy and techniques. SPC is a means of controlling and improving processes through the use of data. Students will be introduced to the history of SPC, the Deming philosophy, process variation, techniques including control charts, and process improvement. (F, Sp, Su)

QUAL 124  Quality Assurance in Service Organizations  
Semester Prerequisite: None
This course introduces students to service quality principles that apply to profit and non-profit, for wage, and volunteer organizations. Topics include: quality concepts, terms and techniques as a basis for a sound quality program, quality failures connected to quality of service, nature and prevention of human error, and customer-focused quality improvement programs. (Sp)

QUAL 200  Quality Improvement Teams  
Semester Prerequisite: None
Covers problem-solving models and techniques for quality 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, team member roles, effective communication skills, and prepare and present projects to the class. (F)

QUAL 203  Quality Planning and Systems Management  
Semester Prerequisite: None
The course focuses on developing, managing, and implementing quality assurance systems. Course materials and assignments are designed to develop student skills in intra- and inter-department quality assurance. Assignments cover quality assurance systems, their development, application, and improvement. (F)

QUAL 205  Cost of Quality  
Semester Prerequisite: QUAL 103
Introduces the student to the definition of costs and the assessment of quality, including the relationship between quality and cost. Topics include: basic financial concepts, cost analysis, and the role of quality in cost reduction. (Sp)

QUAL 206  Statistical Sampling  
Semester Prerequisite: QUAL 103
This course introduces the student to the basic principles of sampling and the usage of standardized sampling plans. Basic probability will be reviewed and operating characteristic curves developed to allow the student to determine sampling plans. The following specific sampling plans will be covered: Dodge-Romig, MILSTD 105, and MILSTD 414. (Sp)

QUAL 207  Control Charts and Problem Solving II  
Semester Prerequisite: QUAL 105
This course covers advanced problem-solving techniques for process variation. Also covered will be advanced control chart concepts including the following charts: X, S, median, modified limits, group, trend, and pre-control. (F)

QUAL 209  Reliability  
Semester Prerequisite: QUAL 103
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. (Sp)

QUAL 212  Applied Statistics for Quality Assurance  
Semester Prerequisite: QUAL 105
This course covers the topics of hypothesis testing, confidence intervals, and sample size determination as applied to various distributions, such as the normal distribution, Student t, chi-squared, and F. Correlation and regression will also be covered. (F)

QUAL 215  Experimental Design in Quality Assurance  
Semester Prerequisite: QUAL 212
This course covers the concepts of analysis of variance and experimental design. Topics include one- and two-way ANOVA, various graphical and numerical tools for effects identification and testing of residuals, and the use of mathematical models. (Sp)

QUAL 224  Manufacturing Supervision  
Semester Prerequisite: None
This course will help students develop skills for supervising personnel in a production environment. Focus on current quality engineering principles. Topics include: customer focus, employee focus, human resources, and front-line supervision. (Su)

QUAL 239  Quality Improvement Projects  
Semester Prerequisite: QUAL 215
This course requires the student to utilize previous knowledge gained in the quality improvement curriculum to develop projects. Topics include project data, analyze data, and reach appropriate conclusions and recommendations. Possible projects may include control charts, hypothesis testing, regression analysis, and experimental design. (F, Su)
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDGR 101</td>
<td>Personal Reading I</td>
<td></td>
<td>May be taken concurrently with other reading courses to provide extra instruction and practice.</td>
</tr>
<tr>
<td></td>
<td>Seminar Prerequisite:</td>
<td></td>
<td>Provides a personal program which combines private tutoring with directed practice.</td>
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<tr>
<td></td>
<td>Departmental Approval</td>
<td></td>
<td>For students with some basic literacy skills.</td>
</tr>
<tr>
<td>RDGR 102</td>
<td>Personal Reading II</td>
<td></td>
<td>Designed to teach fundamental reading skills and to improve confidence and self-esteem.</td>
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<td>Seminar Prerequisite:</td>
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<td>For students with some basic literacy skills.</td>
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<tr>
<td>RDGR 103</td>
<td>Personal Reading III</td>
<td></td>
<td>Designed to teach fundamental reading skills and to improve confidence and self-esteem.</td>
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<tr>
<td></td>
<td>Seminar Prerequisite:</td>
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<td>Provides a personal program which combines private tutoring with directed practice.</td>
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<tr>
<td></td>
<td>Departmental Approval</td>
<td></td>
<td>For students with some basic literacy skills.</td>
</tr>
<tr>
<td>READ 005</td>
<td>Reading Laboratory</td>
<td>Semester</td>
<td>Readings and exercises that help students practice their reading skills.</td>
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<td>Prerequisite: None</td>
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<tr>
<td>READ 100</td>
<td>Reading Clinic IA</td>
<td>Semester</td>
<td>Designed to teach fundamental reading skills and to improve confidence and self-esteem.</td>
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<td>Prerequisite: None</td>
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<tr>
<td>READ 102</td>
<td>Reading Clinic IB</td>
<td>Semester</td>
<td>Designed to teach fundamental reading skills and to improve confidence and self-esteem.</td>
</tr>
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<td>Prerequisite: None</td>
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<tr>
<td>READ 104</td>
<td>Reading Skills IA</td>
<td>Semester</td>
<td>Designed to teach fundamental reading skills and to improve confidence and self-esteem.</td>
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</table>

**RDGR 105: Reading Skills IB**

- **Semester Prerequisite:** None
- **Basic Skills Prerequisite:** Reading Level 1, Writing Level 1
- **Description:** Designed to teach fundamental reading skills and to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005. (May repeat for credit three times.)
REAL 174 Critical Reading II 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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 patterns in written material and to judge rationally what he or she reads. (F, Sp, Su)

REAL 253 HP 17B Seminar 1
Semester Prerequisite: None
This course will acquaint the user of the Hewlett Packard HP-17B Calculator with basic functions, financial calculations, and related real estate calculations. It is designed to provide additional practice with the HP-17B for students currently enrolled in REAL 273, but it is open to any interested students. (Sp)

REAL 271 Introduction to Real Estate 2
Semester Prerequisite: None
Overview of the real estate business. Emphasis on points of law and real estate principles useful to the beginning salesperson and/or potential buyer, seller, or investor. (F, Sp)

REAL 273 Real Estate Investment 3
Semester Prerequisite: REAL 271/274/Departmental Approval
Emphasis is on investment analysis, financing, depreciation, capital gains, exchanging, and federal tax implications of real estate acquisitions, ownership, and disposal. (Sp)

REAL 274 Real Estate License Exam 3
Semester Prerequisite: None
Intense study in the fundamentals of real estate. Preparation for the State of Michigan License Examination, administered by the Applied Measurement Professionals (AMP). This class meets statutory requirements including four hours in fair housing. (F, Sp, Su)

REAL 275 Real Estate Financing 3
Semester Prerequisite: None
Significance and role 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
Semester Prerequisite: None
Covers management and the market, marketing residential and commercial rental space, creating an organized management plan, tenant and landlord laws, rent collection, leases, tenant screening, fair housing requirements, tenant-owner relations, accounting for investment properties, real estate as an investment, managing apartments, office space, retail stores, and special-purpose buildings. (F, Sp)

REAL 278 Real Estate Inspection and Construction 3
Semester Prerequisite: None
A course in basic construction for salespeople, brokers, and those interested in learning more about single-family residential construction. Topics include construction basics, from excavation to finished stages; various architectural styles; mechanical systems; their operation and interrelationships; reading a house plan; common problems of house, and site selection, and building materials. (F, Sp)

REAL 279 Residential Appraisal 3
Semester Prerequisite: None
This is a survey course on the appraisal of the single family residence. It is designed to expose the student to the basic economic, political, social, and environmental foundations upon which real estate valuation rests. The student will then encounter the processes by which a property's value is determined. Students will also be acquainted with professional standards and ethics. (F, Sp)

REAL 280 Real Estate Law 3
Semester Prerequisite: REAL 271/REAL 274/Departmental Approval
Topics covered include land and its elements, land titles, and land interests, abstracts and title insurance, deeds, easements, liens, mortgages, land contracts and foreclosure, and landlord-tenant relations, private land-use controls including restrictions, condominiums, and tax policies pertaining to real estate. (Sp)

REAL 281 Successful Home Buying Seminar 1
Semester Prerequisite: None
The successful home buying seminar introduces students to the fundamentals of selling and buying a home. Participants will learn what they need to know about the buying and selling process, from determining needs to closing procedures. (F, Sp)

REAL 285 Real Estate Update Seminar .25
Semester Prerequisite: None
A series of topical workshops designed to meet the needs of real estate professionals for continuing education in their industry. (F, Sp, Su)

RELG 211 World Religions I 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
This course describes and analyzes the beliefs and practices of Hinduism, Judaism, Christianity, Islam, and other Eastern religions in cultural context, from their origins to the present. It examines their influence on literature and the arts, beliefs and values, sociocultural and political systems, and science and technology in world civilizations. (F)

RELG 212 World Religions II 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
This course describes and analyzes the beliefs and practices of Judaism, Christianity, Islam, and other Western religions in cultural context, from their origins to the present. It examines their influence on literature and the arts, beliefs and values, sociocultural and political systems, and science and technology in world civilizations. (Sp, Su)

RELG 241 Old Testament Literature 4
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This course surveys the content of Judaism's Bible (Christendom'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
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This course surveys the content of Christianity's New Testament in its original Hebraic 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
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
This course surveys the origins and development of East Asian religions: the religious beliefs and practices of Confucianism, Taoism, Buddhism (Mahayana and Tibetan), and Shinto are examined in terms of the vital role that religion has played and is played in the development of ancient and modern East Asian civilizations. (Sp)

RESP 123 Cardiopulmonary Applied Basic Sciences and Microbiology 3
Semester Prerequisite: Admission to Program
Basic Skills Prerequisite: Math Level will be Effective Beginning Spring 1997
(See Class Schedule)
This course explores selected areas of physical and biological sciences as applied to the practice of cardiopulmonary care. Basic physical sciences emphasize the states of matter, gases, fluid, and application laws. Biological science application concerns microbiology of pathogens, infections control, and surveillance in medical practice. (F)

RESP 125 Cardiopulmonary Anatomy and Medical Terminology 3
Semester Prerequisite: Admission to Program
The course explores general medical terminology while providing an in-depth study of cardiopulmonary anatomy and physiology. An emphasis will be placed on building medical vocabulary and word usage in relation to anatomy and physiology of the respiratory, cardiovascular, and blood and lymph systems. (F)

RESP 126 Cardiopulmonary Physiology and Disease 5
Semester Prerequisite: RESP 123, RESP 125/Departmental Approval
This course explores the physiology and pathophysiology of the cardiopulmonary system. Detailed analysis of pulmonary mechanics and studies, gas transport, circulatory system, acid-base balance, V/Q relationships, control of ventilation, and hypoxia is provided. Emphasis is placed in study of the systems in health and disease. (Sp)
RESP 128  Cardiopulmonary Pharmacology and Metrology  2
Semester Prerequisite: Admission to Program
A study of general concepts of pharmacology and metrology for use in cardiopulmonary care. Emphasis is placed on pulmonary drugs and cardiovascular drugs. Medically-related math skills are developed through example and exercise. (F)

RESP 131  Respiratory Therapy Technology I  4
Semester Prerequisite: Admission to Program
Introductory course in professional respiratory care that includes basic obstruction, assessment, patient care, procedures, and physical assessment. Topics of universal precautions and hygiene for the healthcare provider are discussed. (F)

RESP 132  Respiratory Therapy Technology II  4
Semester Prerequisite: RESP 131
Exploration of theory and techniques in individual respiratory care technique. The areas include medical gas, aerosol therapy, airway management, chest physiotherapy, and respiratory therapy. (F, Su)

RESP 133  Respiratory Therapy Technology III  4
Semester Prerequisite: RESP 132
A continuation of the techniques in RESP 132. Emphasis is placed in the following areas: advanced critical care techniques, pulmonary diagnostics, resuscitation, and advanced cardiac life support. (F, Su)

RESP 141  Respiratory Therapy Clinical Practice I  9
Semester Prerequisite: RESP 131
Clinical practice course emphasizing the techniques covered in lecture and laboratory in RESP 132. (Sp)

RESP 142  Respiratory Therapy Clinical Practice II  5
Semester Prerequisite: RESP 132, RESP 142
Clinical practice course emphasizing the techniques covered in lecture and laboratory in RESP 132 and RESP 133. (Su)

RESP 234  Respiratory Therapy Technology IV  3
Semester Prerequisite: RESP 133
Provides advanced concepts and techniques necessary in specialized areas of respiratory therapy practice with an emphasis on emerging concepts in technologies and equipment for this decade. Units of instruction in material and personal management for a clinical environment are presented. (F)

RESP 235  Respiratory Therapy Technology V  3
Semester Prerequisite: RESP 234
A continuation of RESP 234 which presents concepts and techniques necessary in specialized areas of respiratory therapy practice with an emphasis on emerging concepts in technology and equipment for this decade. (Sp)

RESP 244  Advanced Respiratory Clinical Practice III  8
Semester Prerequisite: RESP 143
Designed to provide practice of respiratory care in actual clinical settings for specialized contemporary care. These areas include adult and pediatric critical care, chronic respiratory care, pulmonary function studies, and mechanical ventilation. (F)

RESP 245  Advanced Respiratory Clinical Practice IV  8
Semester Prerequisite: RESP 244
As the continuation of RESP 244, this course is designed to provide a supervised practice of respiratory care in actual clinical settings for each of the specialized contemporary care settings. (Sp)

RESP 251  Practice of Pulmonary Medicine  2
Semester Prerequisite: RESP 133
Practicing respiratory therapist, pulmonologist and other physicians share theory, techniques, and ethics involved in their practice of pulmonary medicine. Designed to not only shape the roles and practices of new therapists, but to promote understanding among different professionals involved in the practice of pulmonary medicine. (F)

RESP 252  Respiratory Professional Testing and Management  2
Semester Prerequisite: RESP 251
Examines in detail two vital areas of professional development of the respiratory therapist. The system of professional advancement for therapists is explored. Diagnostic and professional examination for certification and registry levels are analyzed. Units of instruction in material and personal management for a clinical environment are presented. (Sp)

SAFE 110  Safe Practices and First Aid  3
Semester Prerequisite: None
Covers first aid and treatment through lectures, demonstrations, and practice as outlined by the American Red Cross or equivalent. Safe working practices with hand tools and around machines, safety devices on machines and how to identify and use them. (F, Sp)

SCIS 124  Seminar: Sex Differences in the Human Brain  2
Semester Prerequisite: None
Gender differences in the brain are explored through discussion of current research. Topics include anatomical sex differences in the brains of animals and humans, prenatal and postnatal influence of hormones on brain development, lateralization, and sex differences in sensory perception. Students are required to make an oral presentation. (Sp)

SCIS 227  Independent Study in Science  1
Semester Prerequisite: Departmental Approval
Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, or other natural sciences. The topic is chosen by the student and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement. (F, Sp, Su)

SCIS 299  Independent Study in Science  2
Semester Prerequisite: Departmental Approval
Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, or other natural sciences. The topic is chosen by the student and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement. (F, Sp, Su)

SDEV 103  Preventing Parent Burnout  1
Semester Prerequisite: None
This course is designed to facilitate an understanding of parent burnout and its impact on parental and physical phenomena. The class will address causes, stages, 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 113  Leadership Development IV  2
Semester Prerequisite: SDEV 112. Departmental Approval
Provides an opportunity to apply leadership skills introduced in SDEV 110. SDEV 112 and to learn skills related to candidate screening and selection. Students will select the one-year leadership program participants and evaluate the second year of the program. Students will serve on Lansing Community College's committees and volunteer in community agencies. (F, Sp)

SDEV 118  Stretching Your Dollars  2
Semester Prerequisite: None
Assistance is given in very basic money management, budget procedures, record keeping, wise shopping practices, low-cost entertainment and recreation, effective debt payment methods, and financial goal setting and planning. Consumer awareness and problems in the marketplace will also be addressed. (F, Sp, Su)

SDEV 121  Exploring Your Potential  2
Semester Prerequisite: None
This course is designed to help each person identify past and present achievements which suggest the presence of strengths and potential. The goal of this class is to help the students realize their potential through self-determination. (F, Sp)
SDEV 124 Techniques of Study 2
Semester Prerequisite: None
Students examine their study habits and work toward practicing skills to enhance classroom performance. Classes include weekly lectures, discussions, and assignments. Skills covered include goal setting, time management, note-taking, reading and memory strategies, library use, and taking exams. A valuable aid for beginning and advanced students. (F, Sp, Su)

SDEV 125 Career Planning 2
Semester Prerequisite: None
Students learn a career planning process by identifying their interests, values, and skills through a variety of self-assessment exercises. Students will utilize available resources to research career options and participate in classroom discussions on topics relating to career decision-making. (F, Sp, Su)

SDEV 126 Elimination of Self-Defeating Behavior 2
Semester Prerequisite: None
Learning how self-defeating behaviors are started, maintained, and how they can be eliminated is the goal of this course. Behavior change is aimed at teaching people how to live a more fully and happily by identifying and culturing life-giving behaviors. (F, Sp, Su)

SDEV 127 Job Search Skills 2
Semester Prerequisite: None
Skills and techniques in the job search process are taught. Course content covers filling out applications, writing resumes and cover letters, interviewing, and other techniques used in seeking employment. Group discussions focus upon personal attitudes toward job hunting. (F, Sp, Su)

SDEV 142 Assertiveness 2
Semester Prerequisite: None
Assertive behavior is interpersonal behavior in which a person expresses her or his opinion, feelings, beliefs, wants, personal rights and values in such a way that the rights of others are not violated. Techniques covered involve participants to identify and practice exercising interpersonal rights and assertive skills. (F, Sp, Su)

SDEV 145 Organizing Time 2
Semester Prerequisite: None
The most effective and efficient use of time is learned through structured discussions, audiovisuals, written exercises, and readings dealing with goal setting, getting organized, time and work analysis, procrastination, and other barriers to successful time and task management. (F, Sp, Su)

SDEV 150 Divorce Adjustment 1
Semester Prerequisite: None
This course is designed for those who are experiencing or who have recently completed a divorce. The student-centered atmosphere is supportive and geared toward coping with the loss and tìming constructive alternatives to the emotional crisis of divorce. (F, Sp)

SDEV 152 Men's Discussion Group 2
Semester Prerequisite: None
This course will examine and explore contemporary masculinity. Participants will gain a clearer understanding of the male role, of male stereotypes, and of the impact of societal expectations on men, relationships, one's self, and one's culture. (F, Sp, Su)

SDEV 156 I'm OK/You're OK 2
Semester Prerequisite: None
This course exposes the basic concepts related to transactional analysis (T.A.) and how these concepts can enrich our lives. Within each of us is a child, an adult, and a parent reacting to the world around us. Increased personal awareness about ourselves can help us to be more effective. (F, Sp, Su)

SDEV 157 Single Parenting 2
Semester Prerequisite: None
This course includes such topics as communication, discipline, time structuring, and the unique concerns of adults faced with the responsibilities of raising children in a single parent family. (F, Sp)

SDEV 158 Anger Awareness 2
Semester Prerequisite: None
Based on the objective definition of anger, this course offers the opportunity to better understand and express this most troublesome human emotion. Self-exploration exercises, journal writing, group sharing, role-playing, lectures, and readings are parts of the learning process leading to "adaptive anger" skills which enhance self-esteem and relationships. (F, Sp)

SDEV 159 Women as Winners 1
Semester Prerequisite: None
This course is designed to offer participants new tools for insight, self-awareness, and understanding so that they can learn to set their own goals, emancipate themselves from the boundaries they have set for themselves, and, therefore, learn to become more authentic and self-actualizing. (F, Sp, Su)

SDEV 174 Rational Living 2
Semester Prerequisite: None
Using the teachings of Rational Emotive Therapy, a variety of approaches will be used to provide students with insight into the sources of problems. Techniques are offered to avoid frustration when the world is not the way it should be and for overcoming difficult situations at school, home, on the job. (F, Sp, Su)

SDEV 173 Women Moving Beyond Codependency 2
Semester Prerequisite: None
Students will learn to recognize and value relational strength which lies already present but which are largely unrecognized and undervalued by society. Students will gain understanding of the characteristics of healthy and unhealthy relationships. (F, Sp, Su)

SDEV 190 Success Group 4
Semester 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 relate to failure. (F, Sp, Su)

SDEV 192 Counseling for College Success 2
Semester Prerequisite: None
Designed to stress improvement of academic performance, this 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 193 Building Healthy Relationships 2
Semester Prerequisite: None
For those who wish to take a serious look at "what helps" and "what hurts" in building human relationships. Insights can be applied to any type of relationship and will help participants focus on changes they can make in building a healthier relational life style. (F, Sp, Su)

SDEV 202 Teach Yourself a New Way to Think 2
Semester Prerequisite: None
Sessons are designed to break traditional mind patterns to assist the change process. Students study a variety of thinking strategies and learn new creative thinking techniques. These include imagination, motivation, humor, related relationships, visualization, and fantasy. The course is general in approach and not specific to any one academic discipline. (F, Sp, Su)

SDEV 204 Self-Defense and Women I 1
Semester Prerequisite: None
This seminar is a combination of consciousness-raising and self-defense experiences intended to increase students understanding of defense, self-defense strategies taught in the seminar will focus on response to unarmed attacks. (F, Sp, Su)

SDEV 205 Self-Defense and Women II 1
Semester Prerequisite: SDEV 204
This seminar is both a review and expansion of the techniques and skills taught in "Women and Self-Defense I" (SDEV 204). Self-defense techniques taught in this class will focus on "ground defense" responses to armed attacks. (F, Sp, Su)

SDEV 220 Parenting Skills 2
Semester Prerequisite: None
This course is designed for anyone interested in the development of parenting skills. Skill will include active listening, problem solving, and resolution of family conflict. Application of skills involves infants, pre-schoolers, school-age, and older children. (F, Sp, Su)
SDEV 225 Career Planning and Women 2
Semester Prerequisite: None
Students will be guided through the process of career-decision making focusing on self-exploration and career exploration. Discussions and exercises, in a small group setting, help students identify their interests, skills, and values, including work environments.

SDEV 227 Black Women's Awareness 1
Semester Prerequisite: None
This class is an exploration of concerns and issues confronting the Black woman in America today. Students will have the opportunity to share their views 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, Su)

SDEV 240 Empathy Training - Listening Skills/Facilitating Decisions 2
Semester 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, experimental atmosphere. (F, Sp, Su)

SDEV 242 Dealing With Stress 2
Semester Prerequisite: None
An understanding of stress and how stress affects health and behavior will be taught. The goal is to aid participants in identifying lifetime skills which promote good mental and physical health. Topics include symptoms, personality, dietary influences, communication, balancing roles, goal setting, and wellness. (F, Sp, Su)

SDEV 248 Women's Reentry Seminar 2
Semester Prerequisite: None
Adjusting to change, setting personal and career goals, building support and confidence, preparing for academic success, and communication skills are emphasized in this course designed for those in transition from a homemaking role to that of student or worker. (F, Sp)

SDEV 271 Living Alone Creatively 1
Semester Prerequisite: None
Designed for both single men and single women, this course focuses 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, Sp, Su)

SIGN 169 Orientation to Deafness 2
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3, Writing Level 4
This course is designed to introduce the student to pathological and cultural perspectives on deafness, and the implications these perspectives have for people who are deaf. Topics will be explored through discussions, readings, audiovisual presentations, and guest lectures. (F, Sp, Su)

SIGN 161 American Sign Language I 3
Semester Prerequisite: SIGN 160/Concurrently/Departmental Approval
Signed for students who wish to develop basic knowledge of American Sign Language vocabulary and grammar. There is also emphasis in the use of pantomime to explore non-verbal communication and its function within ASL. (F, Sp, Su)

SIGN 162 American Sign Language II 3
Semester Prerequisite: SIGN 161/Departmental Approval
Designed to increase students knowledge and use of American Sign Language vocabulary and grammar. As well as to focus on specific grammatical elements for more in-depth analysis and practice. (F, Sp, Su)

SIGN 163 American Sign Language III 3
Semester Prerequisite: SIGN 162, SIGN 166
Designed to provide additional vocabulary and synthesis of grammatical elements of American Sign Language through expressive and receptive use of conversational sign language. (F, Sp, Su)

SIGN 164 American Sign Language IV 3
Semester Prerequisite: SIGN 163/Departmental Approval
This course is intended to build conceptual understanding and use of American Sign Language. Students will develop American Sign Language skills by interpreting in ASL paragraphs which are presented in English context. (F, Sp, Su)

SIGN 155 Fingerspelling 2
Semester Prerequisite: SIGN 162/Concurrently
Provides the student with concentrated instruction and practice in both expressive and receptive fingerspelling skills. (F, Sp, Su)

SIGN 157 Receptive Manual Communication 3
Semester Prerequisite: SIGN 163/Concurrently
Designed to increase the student's receptive skills in conversational sign language focusing on comprehension of the various manual communication systems utilized by deaf persons. Sign-to-voice techniques and practice will be introduced through use of prepared videotapes. (Su)

SIGN 158 Expressive Manual Communication 2
Semester Prerequisite: SIGN 162
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 2
Semester Prerequisite: SIGN 162/Departmental Approval
This class explores uses, considerations, and techniques for signing elements of the creative arts including poetry, storytelling, and songs. (Su)

SIGN 176 Advanced Fingerspelling 2
Semester Prerequisite: 2.0 Minimum SIGN 166
Provides the student with advanced concentrated instruction and practice in both expressive and receptive fingerspelling skills. (F, Sp, Su)

SIGN 290 Deaf Culture and History 3
Semester Prerequisite: SIGN 163
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 hard of hearing). (Sp)

SIGN 290 Linguistic Principles of American Sign Language 3
Semester Prerequisite: SIGN 162/Departmental Approval
An overview of the linguistic organization of ASL, including a linguistic perspective on how ASL is learned and how it (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 I 3
Semester Prerequisite: IPT 101/Departmental Approval
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 necessity 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 Principles of Interpreting II 3
Semester Prerequisite: SIGN 261
This course is designed to provide students with simulated testing/interpreter/mediating settings using interactive videotapes of hearing/deaf individuals with the purpose of developing skills necessary for interpreter evaluation. (Su)

SIGN 263 Sign to Voice Interpreting I 3
Semester Prerequisite: SIGN 167
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, attention, and message formulation, vocabulary search, and note-taking. (Sp)

SIGN 264 Sign to Voice Interpreting II 3
Semester Prerequisite: SIGN 263/Departmental Approval
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 singing. Topics include sign information, anticipation and prediction, closure, fluidity, eye contact, memorization, and presentation. (Sp)

SIGN 265 Advanced Interpreting and Transliterating Techniques 3
Semester Prerequisite: SIGN 262/Departmental Approval
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/transcribe. (F)
SIGN 257 Practicum I
Semester Prerequisite: SIGN 256/Departmental Approval
Combines student-organized 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. (Sp)

SIGN 258 Practicum II
Semester Prerequisite: SIGN 257/Departmental Approval
Combines student-organized 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 259 Practicum III
Semester Prerequisite: SIGN 258/Departmental Approval
Combines student-organized lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 64 clock hours in their placement setting. (S)

SOCI 120 Introduction to Sociology
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 3
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)

SOCI 185 The Africans
Semester Prerequisite: None
A survey of the cultural, social, political, and economic importance of Africa in the modern world. The course will include the television series, "The Africans." (Sp)

SOCI 195 Japan Adventure Orientation
Semester 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. (F)

SOCI 254 Marriage and Family
Semester Prerequisite: SOCI 120/PSYC 200
An analysis of the changes in society over the past century in terms of their impact on family relationships, marriage, and family life. Topics will include sex and gender roles, sexual behavior, values, psychological needs, divorce, and parenthood. (F)

SOCI 255 Contemporary Social Problems
Semester Prerequisite: SOCI 120
An analysis of current social problems, such as family instability, environmental decay, educational decline, health care, public and private indebtedness, racism, poverty, crime, and/or urbanization, from a framework of sociological theory and recent empirical studies. (Sp)

SOCI 269 Minority Groups
Semester Prerequisite: SOCI 120
An introduction to the culture and contemporary life styles of American minorities. Emphasis is placed on basic sociological and anthropological concepts with respect to the American experience, particularly the African American, Mexican American, Native American, and Asian American. (F)

SOCI 291 America in the Civil Rights Years
Semester Prerequisite: None
This course explores the social, political, and economic aspects of the civil rights movement in the United States from 1954 to 1965. Key concepts, events, and participants in the movement will be studied in order to illuminate how it has affected the course of American politics and society. (Sp)

SOCI 295 One-Credit Independent Study in Sociology
Semester Prerequisite: Departmental 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)

SOCI 296 Two-Credit Independent Study in Sociology
Semester Prerequisite: Departmental 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)

SOCI 297 Three-Credit Independent Study in Sociology
Semester Prerequisite: Departmental 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
Semester Prerequisite: None
This course introduces the principles of social work practice. Emphasis is on social work careers, description of methods, skills, and standards of practice, definitions of the helping roles, survey of helping agencies and institutions, and overview of social issues and client needs related to social work practice. (F, Sp)

SOWK 202 Social Work Interviewing: Concepts and Skills Practice
Semester Prerequisite: SOWK 101/HUSE 100
This course examines the purposes and basic concepts of the interview relationship with emphasis on interviewing of the helping relationship. It provides instruction in the techniques of interviewing with an opportunity to engage in practice interviews, including videotaping and feedback. (Sp, Su)

SOWK 205 Social Welfare
Semester Prerequisite: SOWK 101/HUSE 100
This course introduces the definition and concept of social welfare, its history, program, attitudes, values, and philosophy. It emphasizes the development of private and public services, changing patterns of services, and the evolving changes in the Social Security Act, and community action, with attention to current issues in social welfare policy. (Sp)

SOWK 207 Community Organization
Semester Prerequisite: SOWK 101/HUSE 100
This course introduces the principles, concepts, and methods of community organization techniques. Emphasis is on the introduction of basic practice skills and intervention techniques within a framework of historical theoretical knowledge. (F)

SPAN 115 Conversational Spanish I
Semester Prerequisite: None
First course of a two-semester sequence in conversational Spanish. Designed for people who have had no knowledge of Spanish who wish to develop 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
Semester Prerequisite: SPAN 115/Equivalent
Second course of a two-semester sequence in conversational Spanish. Designed for people who have had some knowledge of the language and wish to continue developing basic conversational skills. Course emphasizes practical vocabulary, some aspects of Hispanic cultures, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)

SPAN 121 Elementary Spanish I
Semester Prerequisite: None
First course of a two-semester sequence in elementary Spanish. Designed for people 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
Semester Prerequisite: SPAN 121/SPAN 122/Equivalent/Approval
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
Semester Prerequisite: SPAN 102 (SPAN 122/Equivalent/Approval)
First course of a two-semester sequence in intermediate Spanish. Begins with intermediate review of grammar, intensive vocabulary building, listening comprehension, and writing compositions. Encourages conversation by introducing discussions about the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (F)

SPAN 202 - Intermediate Spanish II
Semester Prerequisite: SPAN 201 (SPAN 122/Equivalent/Approval)
Second course of a two-semester sequence in intermediate Spanish. Continues intermediate review of grammar, intensive vocabulary building, strengthens listening comprehension and composition-writing, and improves oral fluency through intensive discussions about the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (Sp)

SPAN 295 - Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in Spanish. Students will invest no less than 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)

SPAN 296 - Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or independent work in 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)

SPCH 110 - Oral Communication in the Workplace
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 2
Introduction to oral communication skills in business and technology. Students will learn to interact effectively in diverse workplace situations. Activities include participating in interviews, managing group dynamics, orienting employees, giving presentations, and using current technology to enhance business communication. (F, Sp, Su)

SPCH 120 - Dynamics of Communication
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 2
Introduction to the theory and practice of speaking and listening effectively in interpersonal, group, and public communication situations. The course utilizes readings, lectures, discussions, class assignments, and oral and written assignments to help students understand the communication process and become more skilled interpersonal, group (team), and public communicators. (F, Sp, Su)

SPCH 130 - Fundamentals of Public Speaking
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2; Writing Level 2
Helps beginning speakers develop the skills and confidence needed to speak effectively in public situations. Through a carefully planned series of speaking assignments, students learn the proper techniques for researching, developing, organizing, outlining, and delivering effective informative and persuasive speeches. (F, Sp, Su)

SPCH 140 - Interpersonal Communication
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2; Writing Level 2
Introduces students to fundamental principles and skills of interpersonal communication. Students learn techniques for interacting effectively in family, interpersonal, and male/female relationships. Class discussions, learning activities, and assignments assist students in examining the impact of their communication on others and in developing effective interpersonal skills. (F, Sp, Su)

SPCH 250 - Advanced Public Speaking
Semester Prerequisite: SPCH 120 (Departmental Approval)
Addresses advanced instruction in the principles and techniques of public speaking. Students' knowledge of public communication is enhanced through the investigation of rhetorical theories and relevant research findings. Students' performance techniques are strengthened through a series of oral assignments focusing on informative, persuasive, and special-occasion speaking. (Sp)

SPCH 260 - Nonverbal Communication
Semester Prerequisite: None
Introduction to the ways people communicate without words. Students investigate nonverbal communication theory and research and learn the messages that gestures, facial expressions, vocal cues, physical appearance, clothing, touch, distance, and time convey in American and foreign cultures. Students' nonverbal communication skills are enhanced through assignments and in-class learning activities. (F)

SPCH 270 - Mass Communication
Semester Prerequisite: None
Introduction to broadcast, film, and print media and their impact on the individual and society. Students investigate theory and research on topics including media effects, media stereotypes, violence, news, and advertising, and the role of media in political campaigns. Assignments and observational projects help students become enlightened media consumers. (Sp)

SPCH 280 - Intercultural Communication
Semester Prerequisite: None
Introduction to intercultural communication theory and skills. Students study the concepts of communication and culture and learn how such variables as perception, world view, religion, language, and nonverbal systems influence interactions between people of different cultural backgrounds. Class discussions, learning activities, and assignments help students develop their intercultural communication skills. (Sp)

SPCH 295 - Independent Study in Speech I
Semester Prerequisite: Departmental Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit in independent study. (F, Sp, Se)

SPCH 296 - Independent Study in Speech II
Semester Prerequisite: Departmental Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit in independent study. (F, Sp, Se)

SPLE 005 - Spelling Laboratory
Semester Prerequisite: None
SPLE 005 arranges the days and times when students will attend spelling lab courses. Students must register for both the spelling lab course, such as SPLE 109, and a section of SPLE 005. (F, Sp, Su)

SPLE 109 - Spelling Development I
Semester Prerequisite: Placement Test
Focuses on basic spelling problems and the principles progressing from elementary three-letter words through words frequently used but commonly misspelled. Prepares students for Spelling Development II. (F, Sp, Su)

SPLE 110 - Spelling Development II
Semester Prerequisite: SPLE 109/Placement Test
Advances from intermediate to college level. Covers words frequently misspelled and misspelled in usage. Includes general spelling principles and their exceptions, unusual and unexpected spellings in the context of dictation, pronunciation, proofreading, and correct usage. (F, Sp, Su)

SPLE 165 - Business Spelling
Semester Prerequisite: SPLE 110/Placement Test
Covers specialized and specialized college-level words frequently misspelled and misspelled in usage. Includes general spelling principles and their exceptions, unusual and unexpected spellings in the context of dictation, pronunciation, proofreading, and correct usage. (F, Sp, Su)

STAT 170 - Introduction to Statistics
Semester Prerequisite: 2.0 Minimum in MATH 121/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 5; Math Level (See Class Schedules)
This is a survey course in statistics for students in social sciences, psychology, education, and other non-business disciplines. Topics studied include descriptive statistics, probability, random variables, normal distribution, chi-square distribution, F distribution, confidence intervals, hypothesis testing, correlation, and linear regression. In addition, students will solve applied problems by compiling required computer assignments using a statistical software package. (F, Sp, Su)
STAT 215 Introduction to Probability and Statistics for Business 4
Semester Prerequisite: 2.5 Minimum in MATH 122/MATH 126/MATH 130/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 5; Math Level (See Class Schedule)
This is a first course in probability and statistics with emphasis on business applications. Topics studied include descriptive statistics, laws of probability, random variables, normal distribution, t distribution, Chi-square distribution, F distribution, confidence intervals, hypothesis testing, correlation, and linear regression. In addition, students will solve applied problems by completing required computer assignments using a statistical software package. (F, Sp, Su)

SURG 100 Fundamental Surgical Technician 3
Semester Prerequisite: Admission to Program
Introduction to role and function of Surgical Technologist as a member of the surgical team. Lectures present all skills, procedures, and protocol necessary to participate in the operating room. (F)

SURG 101 The Surgical Patient 2
Semester Prerequisite: Admission to Program
Lectures will present the protocol and procedures directly affecting the care and safety of the patient. This includes the ethical, legal, and moral responsibilities of the technologist, the concepts of patient care, and preoperative routines. (F)

SURG 103 Surgical Asepsis 2
Semester Prerequisite: Allied Health Professional
Basic course on hospital infections including definitions, pathogenic organisms, bacteria, fungi, viruses, protozoa, and transmission of infectious agents. Covers sterilization and disinfection of equipment and supplies in the operating room. (F)

SURG 104 Operative Procedures 6
Semester Prerequisite: 2.5 Minimum in SURG 100, SURG 101
Lectures will present indications for surgery, patient preparation, special equipment and supplies, purpose and expected outcome, and possible complications. (Sp)

SURG 121 Applied Surgical Techniques I 1
Semester Prerequisite: Admission to Program
First clinical session at an assigned hospital. Application of theory in the use of surgical supplies and equipment before scrubbing in actual procedures. (F)

SURG 122 Applied Surgical Techniques II 4
Semester Prerequisite: 2.5 Minimum in SURG 121
Clinical session at hospital. Students' first experience of application of theory and clinical skills in actual surgical procedures. (F)

SURG 123 Applied Surgical Techniques III 8
Semester Prerequisite: 2.5 Minimum in SURG 122
Clinical session at hospital. Continued application of theory and clinical skills in advanced surgical procedures. (Sp)

SURG 124 Applied Surgical Techniques IV 3
Semester Prerequisite: 2.5 Minimum in SURG 123
Clinical session at hospital. Application of theory and clinical skills in advanced surgical procedures and surgical specialty areas. (Sp)

TOTP 110 Truck Train I 3
Semester Prerequisite: Program Admission
This is the initial course in a sequence of three. This course is intended to prepare the student to pass the State of Michigan CDL written exam, review O.T.T. rules and proper driver's log book reporting. Some vehicle orientation is included. (F, Sp, Su)

TOTP 111 Truck Train II 3
Semester Prerequisite: TOTP 110
This is the second course in a sequence of three. Students will operate the vehicles on the driving range and local roads, developing the skills necessary to interact with highway traffic. (F, Sp, Su)

TOTP 112 Truck Train III 3
Semester Prerequisite: TOTP 111
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 115 Technical Related Seminar 1.5
Semester Prerequisite: None
This course will cover a variety of topics in technical related fields for individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

TECH 164 Boat Building 2
Semester Prerequisite: None
The students learn to build a boat with materials and processes using wood and modern adhesives and coatings in a manner suitable for work in a small shop. Subjects covered include boat design, alternate construction methods, materials required, and laying out the hull. (F, Sp, Su)

TECH 181 Technical Related Seminar 1
Semester Prerequisite: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

TECH 183 Technical Related Seminar 3
Semester Prerequisite: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

TECH 184 Technical Related Seminar 4
Semester Prerequisite: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

THEA 041 Art and Craft of Acting: Scene Study Workshop for High School Students 4
Semester Prerequisite: Departmental Approval
Students work on active acting, voice, and movement skills, analyze dramatic literature, and present a final classroom performance. Designed for motivated high school students. (Su)

THEA 091 Studio Performance Workshop: Play Performance for High School Students 5
Semester Prerequisite: Approval by Audition
Students will perform an entire production of a chosen script. Focus in the workshop will be on basic acting skills, script analysis, script scoring, rehearsal techniques and strategies, and production skills. (Su)

THEA 110 Introduction to Theatre 3
Semester Prerequisite: None
Introduction to Theatre includes definition and analysis of theatrical art, incorporating script analysis, theatre history, the relationship between theatre and the culture from which it comes, and the roles of theatre practitioners. (F, Sp, Su)

THEA 111 Production Practicum I 2
Semester Prerequisite: Departmental Approval
Introduction to the techniques of stage craft for the performing arts; the basic fundamentals involved in tool usage and safety, stage lighting, lighting plot interpretation, and understanding of the organization of backstage production. (F, Sp, Su)

THEA 116 Design Practicum I 3
Semester Prerequisite: None
Introduction to the elements of design and how they relate to performance. Introduction to color theory as it relates to paint, light, and fabric. Techniques of rendering transformation of a picture to three-dimensionality, spatial relationships, and development of a design concept also covered. (Sp)

THEA 120 Introduction to Acting 2
Semester Prerequisite: None
Explores various acting techniques and introduces the beginning student to the skills necessary to maintain a sustained dramatic performance. Theatre games and improvisation exercises to overcome stage fright and to develop concentration and listening skills are heavily emphasized. Students present final short scene. (F, Sp, Su)

THEA 131 Studio Theatre Performance I 1
Semester Prerequisite: Departmental Approval
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)
THEA 132  Studio Theatre Performance III
Semester Prerequisite: Departmental Approval
Course includes rehearsal, performance, and evaluation of verse script or scenes from Shakespeare or the classical Greeks. Focus on application of skills acquired in THEA 142, and on relationship between actor and director. Majors only. (Sp, Su)

THEA 141  Acting I - Contemporary
Semester Prerequisite: Departmental Approval
Fundamentals of acting, including improvisational techniques, mask work, the physical, vocal, and internal development of character; analysis and scripting of a contemporary script. Majors only. (F, Sp)

THEA 142  Acting II - Classics
Semester Prerequisite: Departmental Approval
Fundamentals of acting in heightened context. Students will pursue improvisational work, mask work, and scripting. Students will develop an understanding of the power of language through verse scansion and the physical, vocal, and internal development of characters from classical literature. Majors only. (F, Sp)

THEA 171  Dramatic Form and Function I
Semester Prerequisite: Departmental Approval
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
Semester Prerequisite: Departmental Approval
Dramatic Form and Function II focuses on the writings of Shakespeare and the classical Greeks. The student will read a minimum of eight classical scripts, analyze them using Aristotelian analysis, and research one script in terms of production styles through history. (Sp, Su)

THEA 181  Improvisation
Semester Prerequisite: Departmental Approval
By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development. (F)

THEA 210  Theatre History
Semester Prerequisite: None
Examination of the history of drama from primitive times to the present, introducing the overall pattern of theatre history with emphasis on European and American development. Required for all majors. (F)

THEA 222  Directed Study
Semester Prerequisite: Instructor Approval
Directed study for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction. (Sp)

THEA 223  Directed Study
Semester Prerequisite: Instructor Approval
Course for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction. (F, Sp, Su)

THEA 233  Studio Theatre Performance III
Semester Prerequisite: Departmental Approval
Studio Theatre Performance III provides rehearsal and performance opportunities in oral interpretation and/or readers theatre presentations. Usually offered in eight-week format. Second-year theatre majors only. (F)

THEA 239  Studio Theatre Performance V
Semester Prerequisite: Departmental Approval
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. (F, Sp)

THEA 237  Theatre Special Projects
Semester Prerequisite: Departmental Approval
Students 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 Special Projects
Semester Prerequisite: Departmental Approval
Students will be given the opportunity to direct, design, perform, or produce in College-supported outdoor theatrical events in the amphitheatre or a comparable space. Students will also participate in company class, in which new ideas in acting training will be presented. (Su)

THEA 241  Acting III - Creating Theatre
Semester Prerequisite: Departmental Approval
Explores acting techniques and styles of different historical periods and cultural. 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 study of class selected by instructor. (Sp)

THEA 251  Stage Voice for the Actor
Semester Prerequisite: Departmental Approval
Course will cover strategies in vocal production and variety; focus on exercises to develop vocal flexibility from Lessing, Linklater, and/or Berry techniques, and will experience vocal techniques which lead to greater emotional awareness and expressiveness. For second-year theater majors. (F)

THEA 261  Movement for the Actor
Semester Prerequisite: Departmental Approval
Course will cover strategies in vocal production and variety; focus on exercises to develop vocal flexibility from Lessing, Linklater, and/or Berry techniques, and will experience vocal techniques which lead to greater emotional awareness and expressiveness. For second-year theater majors. (F)

THEA 271  Dramatic Form and Function III
Semester Prerequisite: Departmental Approval
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 theatre majors. (Sp)

THEA 281  Advanced Improvisation II
Semester Prerequisite: Departmental Approval
Students may also work improvisationally with local student groups to develop spontaneity, creativity, and cooperation. (Sp)

THEA 283  Audition Workshop
Semester Prerequisite: Departmental Approval
An intensive workshop in which participants prepare and polish audition materials suited for a professional audition or audition for advance training. Course usually taught by guest actors, agents, or teachers from larger theatrical or film markets. (Sp)

THEA 285  Stage Makeup
Semester Prerequisite: None
A course in the application of stage makeup to develop a character and to assist the actor in sustaining the character in performance. Emphasizes skills in the use of different kinds of makeup, hairstyling, and appearance changes. (Sp)

THEA 295  Acting Styles I
Semester Prerequisite: Departmental Approval
An elective course for advanced students, this course will give the student an opportunity to explore theatrical styles from musical theater to the Greeks. Style is selected by instructor previous to given semester. Usually offered in eight-week format. (F)

THEA 296  Acting Styles Performance
Semester Prerequisite: Departmental Approval
Students choose to rehearse and perform an in-class presentation of skills developed in THEA 295. Usually offered in eight-week format. (Sp)

TRVL 100  Introduction to Travel Agency Operations
Semester Prerequisite: None
An introduction to the career opportunities in travel agency, airline, and tour escorting operations. This class is designed to provide an overview of the travel industry—past, present, and anticipated future. (F, Sp, Su)
TRVL 110 Travel Agency Ticketing Domestic/International
Semester Prerequisite: TRVL 100 Recommended
The fundamentals of air scheduling, reading and correctly using domestic and international air tariffs, and calculating the correct fares for air itineraries. Learning correct procedures for issuing accountable and non-accountable tickets. (F, Sp, Su)

TRVL 120 North American Travel
Semester Prerequisite: None
History and development of the 50 U.S. states, Canada, and Mexico with specific location and identification projects. Major points of tourist interest will be discussed along with climate, ethnic influences, distances, and time zones. (F, Sp, Su)

TRVL 125 Foreign Country Travel II
Semester Prerequisite: None
The history and development of Central America, South America, and the Caribbean with specific location and identification projects. These projects will include countries, capitals, principal cities, rivers, lakes, and mountains. Major points of tourist interest will be discussed along with climate, distances and time zones, viewpoints, and other entry requirements. (F, Sp, Su)

TRVL 130 Foreign Country Travel III
Semester Prerequisite: None
A study of the history and development of the Middle East and Europe, with specific location and identification projects. Major points of tourist interest will be discussed along with climate, distances and time zones, viewpoints, and other entry requirements. (F, Sp, Su)

TRVL 135 Airline/airport Operations
Semester Prerequisite: None
An introduction of tasks performed by airline and airport personnel along with the basic structure and functions of an airport and the airline carriers. Topics to be discussed include ticket counter operation, the gate area, cargo handling and loading, aircraft weight and balance, and various principles of aerodynamics. (F, Sp, Su)

TRVL 140 Computer Reservation Training
Semester Prerequisite: TRVL 100/Aptitude to Type 30 WPM
This is the first of a three-course sequence in instruction and use of the American Airlines SABRE airline reservation system. This course is designed to give the student the basic skills required for making airline computer reservations and use of SABREWorks to create correspondences relating to the travel industry. (F, Sp, Su)

TRVL 145 Introduction to Cruise Sales and Ground Transportation
Semester Prerequisite: None
An analysis of cruise, railroads, car rentals, and bus transportation, including how to sell the above. Other information will include costs, selling techniques, and how to select the best transportation for your client using current profiles and listings and reference materials for domestic and international destinations. (Sp, Su)

TRVL 146 Seminar at Sea
Semester Prerequisite: None
A course designed to develop a basic understanding of cruise lines and their ships. Students will be able to gain firsthand knowledge of cruise lines and pier facilities and also have dialogue with cruise staff members and observe daily cruise activities. (Sp)

TRVL 150 Tourism/Travel Operations
Semester Prerequisite: None
An introduction to the principles of tourism, practices, and philosophies and offers a practical and realistic education in the business of tourism. (F, Sp)

TRVL 170 Opening/Operating/Franchising a Travel Agency
Semester Prerequisite: None
The description and explanation of the procedures involved in starting a new travel agency or acquiring an existing agency. The advantages and disadvantages of co-ops, consortiums, and franchising will also be discussed. This course will provide insight into travel agency operations from a management perspective. (F, Sp)

TRVL 180 Your Career/Flight Attendant
Semester Prerequisite: None
To provide information and practical knowledge of a career as a flight attendant via lectures, discussion, films, and demonstrations both in the classroom and on an aircraft. Information on the duties and responsibilities of the pilot and flight crew will be discussed. (F, Sp)

TRVL 190 Internship and Seminar
Semester Prerequisite: Credits in Travel Program Available to students who have completed or are approaching 200 hours of work experience in tourism or travel agency operations. A term project is required. (Sp, Su)

TRVL 200 Profitable Travel Sales, Marketing, and Counseling
Semester Prerequisite: None
An introduction to sales methods and techniques used in the modern travel agency covering the marketing environment, identifying consumer needs, and examining the product, price, and promotion. To accomplish the above, the act of negotiations, role playing, telephone etiquette, and human relations skills will be included in the course content. (F, Sp, Su)

TRVL 210 Group Travel/Escorting Operations
Semester Prerequisite: None
An overview of group tours and tour escorting operations, and policies and procedures required by tour operators. Content includes how to create groups, how to organize group travel, how to assemble the group tour package, and how to be an effective tour leader. (F, Sp)

TRVL 220 International Relations
Semester Prerequisite: None
Discusses political, social, and economic relationships between countries, and their effects on the travel and tourism industry. Defines and discusses cultural differences, including foreign currencies, discussing travel tips, and adjusting to intercultural living experience. (F)

TRVL 230 Travel and Tourism Law and Current Events
Semester Prerequisite: None
A travel law course for travel agents and their personnel, as well as individuals interested in travel agency operations. The class creates an awareness of the responsibilities and rights which the law imposes upon and grants to the travel agent. The course will also discuss the consequences caused by failure in those responsibilities. (F, Sp)

TRVL 250 Advanced Computer Ticketing
Semester Prerequisite: TRVL 110, TRVL 140
The course will begin with review of materials learned in TRVL 140 and progress to pricing and ticketing, followed by fare construction, fare rules, rate and ticket reservations, SABREVision, the hotel display with pictures and maps, will be utilized, and further use of SABREWorks will be taught. (F, Sp, Su)

TRVL 255 Advanced Sabre Training
Semester Prerequisite: TRVL 250
A course designed to give extended use of the American Airlines SABRE computer. Skills will be taught in the expanded capabilities of the computer in use of international reservations and ticketing, tour bookings, fare structuring, and destination information. Skills taught in the use of SABREWorks, using spreadsheets and databases. (F, Sp, Su)

TRVL 260 Travel Agency Accounting
Semester Prerequisite: None
A course designed to explain and describe basic travel agency accounting concepts. Approximately one-half of the course will be dedicated to the 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)

VCBL 109 Vocabulary Improvement I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 4
Knowledge of and extensive practice with word parts (roots, prefixes, and suffixes) are useful to develop skills in building vocabulary. Emphasis given to correct oral and written usage, dictionary skills, and mastery of troublesome words. (F, Sp, Su)
VCBL 110 Vocabulary Improvement II 2
Semester Prerequisite: VCBL 108
Basic Skills Prerequisite: Reading Level 6; Writing Level 5
Builds on skills developed in Vocabulary Improvement I (word memory, detecting word meaning from context, using dictionary, mastery of roots, prefixes, suffixes) by applying previously mastered roots and skills to learning new, advanced, and career words. (F, Sp, Su)

WELD 100 Combination Welding 4
Semester Prerequisite: None
This is a beginning theory and practice course which will introduce the safe operations and applications of tig/ argon arc 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
Semester Prerequisite: WELD 100
Students will develop the skills necessary to produce quality multiple pass fillet and groove welds on steel plates. Conventional and low hydrogen electrodes are used in preparation of passing performance tests in all positions. Destructive testing methods, weld profiles, and welding symbols as related to arc welding are introduced. (F, Sp, Su)

WELD 110 Gas Metal Arc Welding 4
Semester Prerequisite: WELD 100
Provides technical understanding and applications of gas metal arc welding and flux cored arc welding. Fundamentals: safety, equipment adjustments, metal transfers, and shielding gases will be covered. Develops manual skill in all positions on different thicknesses and types of metals, including basic programming of an automated robot cell. (F, Sp, Su)

WELD 111 Gas Tungsten Arc Welding 4
Semester Prerequisite: WELD 100
Students will develop the skills, principles, and applications of gas tungsten arc welding and plasma arc welding. Welds will be done on different thicknesses of ferrous and non-ferrous metals in all positions. Proper material cleaning, fit-up, and safety will also be addressed. (F, Sp, Su)

WELD 120 Structural Fabrication and Inspection 4
Semester Prerequisite: WELD 101
Introduction to steel fabrication in accordance with the American Welding Society Structural Welding Code. D1.1 applications and requirements. The student will be introduced to the numerous destructive and non-destructive methods of welding inspections. Satisfactory completion of this course will assist the student in passing a welding certification test. (F, Sp)

WELD 125 Structural Blueprint Reading for Welders 2
Semester Prerequisite: MATH 050
Basic Skills Prerequisite: Math Level 1 will be Effective Beginning Spring 1997
(See Class Schedule)
Blueprint and welding symbols are the universal language of the welding industry. It is developed for students, apprentices, technicians, and others who must develop the ability to read and interpret accurately blueprints. Teaches awareness of the advancement in metallurgy, welding processes, consumables, and strict code enforcement used in industry today. (F)

WELD 194 Welding Project Lab 4
Semester Prerequisite: Departmental Approval
Further welding skills in maintenance welding, production welding, resistance welding, and/or torch and die welding, depending on the direction the student would like to take his or her welding skills. (F, Sp)

WELD 201 Tool and Die Welding 4
Semester Prerequisite: WELD 101, WELD 111, MACH 135
Theory and practice methods involved in welding various alloyed metals, preheat and postheating of metals, recognition of materials, alloying elements, and their effects. Also, the proper usage of air, oil, and water hardening steels. (F, Sp)

WELD 205 Pipe Welding 4
Semester Prerequisite: WELD 101, WELD 120
Theory, cutting, fit up, and practice on different sizes of pipe using shielded metal arc welding. Various weld and basic metal testing methods are used to the strict code requirements. Focus on low hydrogen type electrodes in groove and fillet welds in the 2G, 5G, and 6G positions. (F)

WELD 210 Aircraft Welding 2
Semester Prerequisite: Departmental Approval
Presents welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aviation maintenance techniques. (F, Sp)

WRIT 005 Writing Laboratory 0
Semester Prerequisite: None
WRIT 005 arranges the days and times when students will attend writing lab courses. Students must register for both a writing lab course and a section of WRIT 005. (F, Sp, Su)

WRIT 101 Writing Laboratory I 1
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 102 Writing Laboratory II 2
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 103 Writing Laboratory III 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 104 Writing Laboratory IV 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 110 Confidence in Writing 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to help students understand the writing process, reduce writing anxiety, and develop basic writing skills. Emphasizes planning, composing, and revising strategies for experimental writing. Provides frequent writing practice in a supportive workshop environment. Students who earn exit competency in this will have a writing skill level of 3. (F, Sp, Su)

WRIT 111 Writing Preparation I 2
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Prepares students for Writing Preparation II by teaching students to see themselves as writers, to take responsibility for developing their writing and editing skills, and to use language skills intentionally to support their writing projects. The classroom offers a supportive workshop environment; the lab offers individualized tutorial assistance with editing skills. (F, Sp, Su)

WRIT 113 Business Research Report Writing 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 6
Covers the wide range of reports required in the business world, including multicultural communications. Also emphasizes conducting research using primary and secondary sources, and writing both informal and formal business reports and proposals. Active team participation and oral presentations are also required. (Sp)

WRIT 114 Business English 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 5
This course is designed to review all parts of grammar, punctuation, and sentence structure. There will be special emphasis on usage of rules covering proper usage of punctuation, capitalization, possessives, number usage, prudural, and mechanics for written business communication. Business English is required for machine transcription and business communication. (F, Sp, Su)
WRIT 115 Business Communications 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
This course emphasizes competent writing in business through learning appropriate business writing style. Emphasis is placed on tone, clarity, conciseness, and completeness. Sentence structure and appropriate paragraphing are stressed for effective total messages. Students practice writing routine, informational, persuasive, and employment-related communications. (F, Sp, Su)

WRIT 117 Writing Preparation II 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 4
Designed to help students improve their writing in preparation for transfer-level academic courses. Students who earn exit competency in this course will have a writing skill level of 4. (F, Sp, Su)

WRIT 118 Personal Writing 3
Semester Prerequisite: None
Explores the various forms of personal writing (diaries, journals, letters, personal narratives, and autobiography) through written exercises and selected readings. The student's observations and life experiences are the focus of written assignments. Emphasizes language, style, and tone appropriate to the different forms of personal writing. (F)

WRIT 119 Writing Skills Review 1
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Designed to help WRIT 121--122 composition students and others improve their basic sentence and mechanics skills by providing intensive writing and editing practice in a workshop setting. (F, Sp, Su)

WRIT 121 Composition I 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes content development, organization, and style, and includes instruction in basic library skills. Students will write summaries, reports, and analytical expository and argumentative essays. Some sections use word processing. (F, Sp, Su)

WRIT 122 Composition II 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use word processing. (F, Sp, Su)

WRIT 124 Technical Writing 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
A college-level course in the study and practice of technical writing in a variety of formats for select audiences. Covers 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 131 Honors Composition I 4
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 7
Covers the same material as WRIT 121 but with additional work to challenge the superior writer. (F, Sp)

WRIT 132 Honors Composition II 4
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use word processing. (F, Sp)

WRIT 195 Writing User Documentation 3
Semester Prerequisite: None
Designed for processing students and professionals. Teaches students to write effective documentation for users of complex systems. Focuses on writing step-by-step procedures explaining responsibilities and activities of users. Emphasizes the clear, precise communication necessary for successful system operation and smooth workflow. (F, Sp)

WRIT 262 Prose Style 3
Semester Prerequisite: None
An advanced study of non-fiction prose writing. Extensive directed practice helps experienced writers make their own writing clear, precise, direct, and graceful. Workshop sessions include a study of the expectations and choices in various types of writing, and of the relationships among purpose, structure, words, sentences, grammar, punctuation, and style. (Sp)

WRIT 269d Reviewing The Arts 3
Semester Prerequisite: WRIT 122/ENGL 122/Departmental Approval
Develops criteria for evaluating the visual and performing arts, music, and literature. Sharpens the student's skills as a reviewer of the arts through reading, writing, and viewing mass media presentations, exhibits, and performances on- and off-campus. Concepts of form, content, style, and medium of expression will be introduced. (Sp)

WRIT 281 Writing For Publication 3
Semester Prerequisite: None
Study of free-lance writing and marketing, with focus on non-fiction. Students review a variety of effective writing techniques, study marketing information for their particular fields such as analyses of potential publishers and query letters, and discuss their writing in a workshop setting. Students prepare manuscripts for submission to editors. Word processing available. (F)

WRIT 282 Forum for Authors 3
Semester Prerequisite: None
An advanced course in free-lance writing for authors working on manuscripts. Students meet in a workshop setting to refine ideas, convince writing, solve problems, and develop material for submission to periodicals or book editors. Includes advanced study of effective writing techniques and marketing information. Occasional speakers. Word processing available. (Sp)

WRIT 285 Creative Writing I 3
Semester Prerequisite: None
WRIT 285 is designed to help students develop expressive abilities in writing poetry and short stories. Emphasizes narrative modes of the short story, traditional meter, and free verse forms of poetry. Includes models from students and masters in both fiction and poetry. (F, Sp)

WRIT 286 Creative Writing II 3
Semester Prerequisite: WRIT 285/Departmental Approval
Emphasizes improving the ability to write effective poems, short stories, and novellas. Students select their own subjects and receive immediate responses through group discussion. (F)

WRIT 287 Writing Workshop 3
Semester Prerequisite: Departmental Approval
Examines language and style as the most critical choices a creative writer makes in directing the reader's perception of and response to the work. Develops the writer's ability to control tone and style. Manuscripts will be reproduced and discussed in a workshop setting. (Sp)

WRIT 295 Independent Study in Writing I 1
Semester Prerequisite: Departmental Approval
Individual projects in writing or journalism. Students will spend at least two hours a week for each credit in independent study. (F, Sp, Su)

WRIT 296 Independent Study in Writing II 2
Semester Prerequisite: Departmental Approval
Individual projects in writing or journalism. Students will spend at least two hours a week for each credit in independent study. (F, Sp, Su)

WRTR 101 Writing Practice I 1
Semester Prerequisite: Departmental Approval
May be taken concurrently with other writing courses to provide extra individualized instruction and practice. Requires enrollment in WRIT 105, which arranges times for laboratory attendance. (May repeat for credit three times) (F, Sp, Su)
WRTR 102  Writing Practice II  
**Semester Prerequisite:** Departmental Approval
May be taken concurrently with other writing courses to provide extra individualized instruction and practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRTR 103  Writing Practice III  
**Semester Prerequisite:** Departmental Approval
May be taken concurrently with other writing courses to provide extra individualized instruction and practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRTR 104  Writing Practice IV  
**Semester Prerequisite:** Departmental Approval
May be taken concurrently with other writing courses to provide extra individualized instruction and practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)
SPECIAL COURSES
The following courses are generally not offered for enrollment by individual students. These courses are designed in cooperation with various organizations such as businesses, governmental agencies, school districts, labor organizations, or other groups to meet their special needs. For additional information, please contact the Community Service and Continuing Education Division at (517) 483-9650.

DESCRIPTIONS

CHEM 115 Environmental Issues of Japan 3
Semester Prerequisite: None
The course will include a discussion of several global environmental problems as they relate to Japan. Specific topics include air pollution, water pollution, solid waste management, the ozone layer, the greenhouse effect, nuclear energy, and disposal of radioactive wastes. (Su)

COOP 271 Cooperative Education MDOT I 3
Semester Prerequisite: MDOT Employees Only
Provides first-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction, as well as attending in-class instruction. Enrolment is restricted to MDOT Civil Technology cooperative education students. (Su)

COOP 272 Cooperative Education MDOT II 3
Semester Prerequisite: MDOT Employees Only
Provides second-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction, as well as attending in-class instruction. Enrolment is restricted to MDOT Civil Technology cooperative education students. (F, Su)

FIRE 290 Fire Officer Seminars 1
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of 18 individual weekend seminars leading to certification as Fire Officer I, II, III. Those courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter's Training Council. (F, Sp)

FIRE 291 Fire Officer Seminars .75
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of 18 individual weekend seminars leading to certification as Fire Officer I, II, and III. Those courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter's Training Council. (F, Sp)

FIRE 292 Fire Officer Seminars .5
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of 18 individual weekend seminars leading to certification as Fire Officer I, II, and III. Those courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter's Training Council. (F, Sp)

FIRE 293 High Angle Rescue 3
Semester Prerequisite: FIRE 101/Firefighter
A hands-on seminar for fire department members who desire to participate in high angle rescue operations. Equipment is provided for the class. (F, Sp, Su)

FIRE 294 Tactical and Heavy Rescue Operations 4
Semester Prerequisite: Firefighter/Police Officer/EMS
Tactical rescue encompasses low angle trench and confined space rescue elements. This seminar is hands on. Adherence to safety requirements is stressed. (F, Sp, Su)

FIRE 295 Hazardous Materials Awareness Level .5
Semester Prerequisite: None
This course is OSHA required training for first responders. The course is designed to heighten the awareness of emergency personnel to the potential dangers of a hazardous materials incident in their community. (F, Sp, Su)

FIRE 296 Hazardous Materials Operations Level 1
Semester Prerequisite: FIRE 295
This course is designed to comply with OSHA training requirements on hazardous materials as defined in 29 CFR 1910.120 and to create further awareness regarding the dangers of responding to a haz-mat incident. (F, Sp, Su)

FIRE 297 Hazardous Materials Air Monitoring .5
Semester Prerequisite: FIRE 296
This seminar addresses advanced techniques in air monitoring at hazardous material emergency sites for the operational level practitioner. (F, Sp, Su)

FIRE 298 Confined Space Rescue 1
Semester Prerequisite: FIRE 101/Firefighter
The Confined Space Rescue emphasizes practical techniques and considerations when effecting rescue from vessels, sewers, tanks, and other confined areas. This seminar is hands-on. Adherence to safety requirements is stressed. (F, Sp, Su)

HMFS 170 Menu Design and Layout 3
Semester Prerequisite: None
This course includes the basics in menu planning, analysis, and pricing. Menu layout and design fundamentals are covered; and the integration of the menu into the operational aspects of purchasing, production, and service is explored. Project required. (F, Su)

HMFS 177 Introduction to Hotel and Food Service Operations 1
Semester Prerequisite: None
An introduction to the hotel-motel-food service industry, its management departments, and responsibilities. Designed specifically for Hotel/Adventur/Horizon students. (F, Sp, Su)

HMFS 180 Japan Adventure Internship 2
Semester Prerequisite: None
Attend meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company. (F, Sp, Su)

HMFS 181 Japan Adventure Internship 2
Semester Prerequisite: None
Attend meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company. (F, Sp, Su)

HMFS 183 Practicum in Japanese Culture 2
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus, and understanding various types of Japanese traditional dresses. Practical training in calligraphy and abacus. (F, Sp, Su)

HMFS 185 Practicum in Japanese Culture 3
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus, and understanding various types of Japanese traditional dresses. Practical training in calligraphy and abacus. (F, Sp, Su)

HUMS 125 Japan: Past and Present 3
Semester Prerequisite: None
This course traces the development of Japan's tradition with strong emphasis on history, religion, and literature. Further, this course demonstrates that modern Japan can best be understood in light of its distinctive traditions. (Sp)

HVAC 184 Heating, Ventilating, and Air Conditioning Seminar 4
Semester Prerequisite: None
Seminar may cover any or all of the following topics: cooling, heating, humidifying, heating servicing and/or ventilating, etc. For individuals already in the Heating, Ventilating, Air Conditioning and Refrigeration (HVACR) field, or anyone interested in these areas. (F, Sp, Su)

MDCR 201 Assertive Training .5
Semester Prerequisite: None
This one-day seminar is designed to introduce participants to some of the principles and dynamics of assertive behavior. It will help participants identify and accept their basic interpersonal rights while respecting the rights of others. (F, Sp, Su)

MDCR 224 Introduction to Negotiating Skills .5
Semester Prerequisite: None
Certain basic negotiating skills can be applied to a number of different situations, both business and personal. This training will focus on strategies for conducting negotiation sessions with employees, customers, and suppliers. It will not cover strategies for negotiating union contracts. (F, Sp, Su)
MDCR 227 Effective Board Training
Semester Prerequisite: None
The purpose of this seminar is to provide participants with knowledge, skills, and attitudes for serving in voluntary, elected, or appointed positions on boards, committees, and commissions in government, business, and human service. (F, Sp, Su)

MDCR 242 Consultative Selling
Semester Prerequisite: None
This seminar is based on a combination of education, experience, and application. It is a comprehensive in-depth look at the tools and techniques available to expand current sales knowledge and develop new sales skills for the sales professionals. (F, Sp, Su)

MDCR 345 Customer Service
Semester Prerequisite: None
All employees have the potential for creating good customer relations and improving the image of the organization. The critical factors include increased motivation through a positive mental attitude, effective communication with different types of customer personalities, sensitive handling of customer complaints, and successful strategies for meeting needs to satisfy customers. (F, Sp, Su)

MDCR 252 Supervisory Skills Training
Semester Prerequisite: None
This seminar is an eight-hour program that addresses the basic concepts and skills for new supervisors in addition to providing some self-assessment. (F, Sp, Su)

MDCR 264 Leading Effective Meetings
Semester Prerequisite: None
The purpose of this seminar is to help participants develop the skills necessary for leading effective meetings. These include many facets of planning and preparing for a meeting, conducting a meeting, and following up on a meeting. (F, Sp, Su)

MDCR 275 Establishing Dynamic Leadership
Semester Prerequisite: None
Dynamic leaders create visions and translate those visions into reality within their organizations. This seminar describes the essential features and functions of dynamic leadership in the context of the present world market. Participants will be inspired to develop their abilities as dynamic leaders. (F, Sp, Su)

MDCR 276 Building High Performance Teams
Semester Prerequisite: None
Dynamic leaders develop dynamic teams. They need followers, but followers who can function independently and cooperatively in the organizational endeavor. This course instructs participants in practical strategies for creating dynamic teams. (F, Sp, Su)

MDCR 277 Facilitating Group Decision-Making
Semester Prerequisite: None
In order for groups to work together, leaders must be skilled in people and task functions. They must be able to lead a group through a process of decision making while maintaining positive relationships and high quality decisions. This seminar will train participants in the skills of leading and the processes of decision making. (F, Sp, Su)

MDCR 278 Developing Strategic Plans
Semester Prerequisite: None
Effective strategic planning is essential for long-term success in the work market. It focuses on doing the right thing, and on doing effective. This seminar teaches a team approach to strategic planning. (F, Sp, Su)

MDCR 279 Communicating Thoughts Orally
Semester Prerequisite: None
Collecting one's thoughts and speaking extemporaneously to present one's reaction, viewpoint, or pertinent information is a vital ability for leaders. This workshop will instruct participants in the strategies for gathering one's thoughts and presenting them clearly and logically. (F, Sp, Su)

MDCR 280 Strengthening Interpersonal Relationships
Semester Prerequisite: None
Good interpersonal skills are essential for productive working relationships and for maintaining an efficient working environment. This seminar provides training to managers in techniques for strengthening interpersonal skills for improved working relationships. (F, Sp, Su)

MDCR 281 Dealing With Difficult People
Semester Prerequisite: None
Difficult people create problems! In this practical seminar participants will observe and practice effective strategies for handling difficult people. Participants will be able to reduce the problem of difficult people create. (F, Sp, Su)

MDCR 282 Analyzing and Solving Performance Problems
Semester Prerequisite: None
A primary element of solving performance problems is creating and sustaining a supportive work environment. This seminar provides training to supervisors and managers that will help identify and solve work problems and encourage peak employee activity. (F, Sp, Su)

MDCS 200 Dynamics of Relationships
Semester Prerequisite: None
This workshop will train participants to develop positive, productive relationships. Participants will develop a variety of skills to deal with specific kinds of problems. (F, Sp, Su)

MDCS 203 Increasing Human Effectiveness
Semester Prerequisite: None
Effective communication skills are essential for any relationship. The ability to establish and maintain productive relationships is vital in a professional as well as personal life. Increasing Human Effectiveness explores factors affecting interpersonal relationships, and the processes used to gain and give information. (F, Sp, Su)

MDCS 211 How to Get Things Done
Semester Prerequisite: None
This seminar is designed for first-level supervisors, office managers, and administrative assistants. It will sharpen communication skills and time management capabilities as well as encourage an action plan. (F, Sp, Su)

MDCS 220 Managing Your Career
Semester Prerequisite: None
An intensive one-day seminar designed to acquaint the participants with personal career planning techniques. The program emphasizes self-direction and responsibility for career growth. Primarily, emphasis is upon becoming successful in one's current position first, and then building long-term career goals based upon this success. (F, Sp, Su)

MDCS 225 Problem Solving/Decision-Making
Semester Prerequisite: None
Problems occur in all areas of life. This seminar acquaints participants with practical strategies and workable skills for handling problems, and offers practice activities for solving problems as a group or an individual. (F, Sp, Su)

MDCS 230 Developing Instructional Materials
Semester Prerequisite: None
Learn how to write goals and objectives, sequence instruction, identify strategies development tools, and evaluate your instructional materials. During the seminar, you will develop materials for your own training programs. (F, Sp, Su)

MDCS 231 Guiding the Training Process
Semester Prerequisite: None
This seminar considers four fundamental principles of adult learning. Topics include motivating resistant learners, creating a positive climate for learning, participative training techniques, and learning contracts. (F, Sp, Su)

MDCS 232 Applying the Principles of Adult Learning
Semester Prerequisite: None
Learn the necessary skills for facilitating a training program. Includes asking and answering questions, administering and debriefing exercises, giving constructive feedback, guiding small group discussion, demonstrating, and prompting learners. (F, Sp, Su)

MDCS 233 Instructional Media for Trainers
Semester Prerequisite: None
This seminar introduces trainers to media available to make instruction more effective. Transparencies, charts, slides, videotapes, audiotapes, and other media will be discussed. Participants will analyze their own instructional programs and identify the appropriate media to use. (F, Sp, Su)
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MDCS 234 Teaching Through Demonstration 1
Semester Prerequisite: None
This seminar presents several specific strategies for teaching skills in one-on-one training situations. Each strategy is presented and participants are given an opportunity to apply it in simulated activities. Participants also learn how to overcome anxiety and learning barriers. (F, Sp, Su)

MDCS 235 Using Audiovisual Equipment 1
Semester Prerequisite: None
In this basic level course, participants will learn to setup, operate, troubleshoot, and reassess the following equipment: 16mm film projector, overhead projector, slide projector, audiotape recorder, video recorder, and flip chart. (F, Sp, Su)

MDCS 240 Telemarketing 1
Semester Prerequisite: None
This seminar is designed to make people more productive over the telephone. It teaches telephone selling skills to help participants make better use of time and increase sales. It will also show how to put information power to work. (F, Sp, Su)

MDCS 245 Customer Service 1
Semester Prerequisite: None
All employees have the potential for creating good customer relations and improving the image of the organization. The critical factors include increased motivation through a positive mental attitude, effective communication with different types of customer personalities, sensitive handling of customer complaints, and successful strategies for resolving needs to satisfy customers. (F, Sp, Su)

MDCS 250 Management Skills I 1
Semester Prerequisite: None
This two-day seminar is designed to help supervisors analyze their present strengths and skills affecting their management of group employees. Participants will explore and practice techniques to aid them in becoming more effective managers. (F, Sp, Su)

MDCS 251 Management Skills II 1
Semester Prerequisite: None
This seminar is designed to help supervisors analyze their present strengths and skills affecting their management of group employees. Participants will explore and practice techniques to aid them in becoming more effective managers. (F, Sp, Su)

MDCS 255 Power and Risk Management 1
Semester Prerequisite: None
This workshop is designed to give some basic power concepts, and to help develop an understanding of how the organization in which we work affects one’s ability to have and to use power effectively. This workshop looks at the organizations and how they affect people’s power strategies. (F, Sp, Su)

MDCS 259 Managing Problem Employees 1
Semester Prerequisite: None
Participants will learn why some employees perform their jobs unsatisfactorily and are “problem” employees, and what supervisors can do about them. (F, Sp, Su)

MDCS 261 Managing Diverse Work Force-90s 1.5
Semester Prerequisite: None
Participants in this seminar will learn to apply knowledge about work force diversity to work situations related to human resource management, communication, potential conflict, and group effectiveness. Participants will be better able to do their job, and be better equipped to promote improved working relationships within the organization. (F, Sp, Su)

MDCS 266 Managing Organizational Change 1
Semester Prerequisite: None
This workshop will enable participants to manage the change process in their current work environment. Participants will identify the positive and negative effects of change on the organization, as subgroups within the organization, and on the individual. They will develop alternatives for implementing change, and will identify support systems in internal and external environments. (F, Sp, Su)

MDCS 268 Project Management 1
Semester Prerequisite: None
This training will equip state personnel to understand and effectively administer a project. All aspects of analyzing project intent, planning, budgeting, use of funds, program evaluation, staff administration, information management, report writing, crisis elimination, and trouble avoidance will be covered. (F, Sp, Su)

MDCS 270 Management II 1.75
Semester Prerequisite: None
Management II is a four-day course for supervisors with limited or no experience. It focuses on the operational needs of translating management and fundamental concepts. (F, Sp, Su)

MDCS 271 Management III 1.75
Semester Prerequisite: None
Management III is a four-day course for experienced managers. It concentrates on skills necessary to build and supervise more effective work groups through participative management. (F, Sp, Su)

MDCS 272 Management IV 1.75
Semester Prerequisite: None
Management IV is a four-day course for experienced managers. It examines group dynamics and processes and synergistic functioning, provides techniques for organizational development, for improving organization climate, and for attaining organization goals, emphasizes group decision-making problem solving, project planning, and team building. (F, Sp, Su)

MDCS 275 Dynamic Leadership 1
Semester Prerequisite: None
Dynamic leadership creates visions and translates those visions into reality within their organizations. This seminar describes the essential features and functions of dynamic leadership in the context of the present world market. Participants will be inspired to develop their abilities as dynamic leaders. (F, Sp, Su)

MDCS 276 Team Building 1
Semester Prerequisite: None
Dynamic leaders develop dynamic teams. They need followers, but followers who can function independently and cooperatively in the organizational endeavor. This seminar instructs participants in practical strategies for creating dynamic teams. (F, Sp, Su)

MDCS 277 Leading Group Decision-Making 1
Semester Prerequisite: None
In order for groups to work together well, leaders must be skilled in people functions and task functions. They must be able to lead a group through a process of decision-making while maintaining positive relationships and high-quality decisions. This seminar will teach participants in the skills of leading and the processes of decision-making. (F, Sp, Su)

MDCS 278 Strategic Planning 1.5
Semester Prerequisite: None
Effective strategic planning is essential for long-term success in the work market. It focuses on doing the right thing, and on being effective. This seminar teaches a team approach to strategic planning. (F, Sp, Su)

MDCS 282 Solving Performance Problems 1
Semester Prerequisite: None
A primary element for solving performance problems is creating and sustaining a supportive work environment. This seminar provides training to supervisors and managers that will help identify and solve work problems and encourage peak employee activity. (F, Sp, Su)

MDCS 290 Selection and Evaluation Interviewing 1.75
Semester Prerequisite: None
This seminar covers the three stages of the hiring process. Activities include developing interview questions, identifying minimum job descriptions, discussing Equal Employment Opportunity and Affirmative Action concerns, practicing interview techniques, interpreting interview information, and developing critical orientation procedures for new employees. (F, Sp, Su)

MDCS 295 Job Description and Performance Standards 1
Semester Prerequisite: None
This program is designed for any person whose job responsibilities include analyzing job performance, whether as the primary decision-maker, or as a contributing/ advisory decision helper. This includes small business owners and managers, personnel representatives and supervisors. (F, Sp, Su)

MDCS 296 Employee Selection Interviewing 1
Semester Prerequisite: None
A three-stage model for interviewing (planning, conducting the interview, debriefing), the characteristics of an effective interview, and legal and illegal pre-interview inquiries. Practices skills for conducting the interview. (F, Sp, Su)
MDCS 297 Coaching Work Performance .5
Semester Prerequisite: None
Learn to address performance problems so that employees know what is wrong and how to correct it. Learn how to reinforce expected performance, communicate expectations, and utilize effective feedback methods and goal setting. (F, Sp, Su)

MDCS 298 Employee Performance Appraisal .5
Semester Prerequisite: None
The primary reason for implementing a performance appraisal system is to effectively communicate with employees about job performance. In this seminar participants will learn how to set standards, evaluate performance, and conduct performance appraisal meetings. (F, Sp, Su)

MUCS 299 Managing Discipline .5
Semester Prerequisite: None
Learn the difference between prevention and corrective discipline, how to utilize documentation, and the critical steps of due process to ensure the rights of all individuals. (F, Sp, Su)

MUCS 101 Lansingers Vocal Ensemble 1
Semester Prerequisite: Audition Approval
The purpose of Lansingers, a vocal jazz ensemble, is to develop artistic and creative vocal jazz skills for ensemble performance. Advanced solo experience, microphone techniques, and vocal improvisational skills will be developed. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUCS 102 Women's Chorus 1
Semester Prerequisite: Audition Approval
An ensemble of women vocalists composed of students and community members, which develops musicality 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)

MUCS 108 Concert Choir 1
Semester Prerequisite: Audition Approval
A select group of singers who perform a wide range of music, sacred and secular. 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)

MUCS 119 Lansing Concert Band 1
Semester Prerequisite: Audition Approval
A community band serving as the official band of the City of Lansing. The group performs throughout the year, and plays all types of music but primarily concentrates on traditional concert band literature. Students are required to play in public performances of the band. May be taken up to six semesters for credit. (F, Sp, Su)

MUCS 123 Jazz Ensemble 1
Semester Prerequisite: Audition Approval
The jazz ensemble will rehearse and perform pieces of various styles and from various periods in jazz and big band development. Improvisational skills will be taught and developed. The group performs two to four concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)

POLS 280 Politics and Government of Japan 3
Semester Prerequisite: None
An introduction to the Japanese governmental structures and political process, with emphasis on the unique characteristics of Japanese political culture, Japanese style of decision-making, and Japanese concepts of democracy. (F, Sp)

QSEM 605 Quality Assurance Seminar .5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 110 Quality Assurance Seminar 1
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 115 Quality Assurance Seminar 1.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 120 Quality Assurance Seminar 2
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 125 Quality Assurance Seminar 2.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 130 Quality Assurance Seminar 3
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 131 Quality Assurance Seminar 3.75
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 135 Quality Assurance Seminar 3.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 140 Quality Assurance Seminar 4
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 145 Quality Assurance Seminar 4.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

QSEM 150 Quality Assurance Seminar 5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

READ 119 Concentrated Speed Reading 1
Semester Prerequisite: Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
Designed for the average or better-than-average reader. Students improve rate by developing good reading habits, increasing reading flexibility, and practicing efficient reading techniques. Focuses on the aspects of perception and selectivity in rapid information processing. (F, Sp, Su)

RSEM 005 Resource and Operations Management Systems Seminar .5
Semester Prerequisite: None
Course content varies with the seminar. (F, Sp, Su)

RSEM 110 Resource and Operations Management Systems Seminar 1
Semester Prerequisite: None
Course content varies with the seminar. (F, Sp, Su)

RSEM 115 Resource and Operations Management Systems Seminar 1.5
Semester Prerequisite: None
Course content varies with seminar. (F, Sp, Su)

RSEM 120 Resource and Operations Management Systems Seminar 2
Semester Prerequisite: None
Course content varies with seminar. (F, Sp, Su)

RSEM 125 Resource and Operations Management Systems Seminar 2.5
Semester Prerequisite: None
Course content varies with seminar. (F, Sp, Su)

RSEM 130 Resource and Operations Management Systems Seminar 3
Semester Prerequisite: None
Course content varies with seminar. (F, Sp, Su)

SOCJ 280 Introduction to Japanese Culture 3
Semester Prerequisite: None
An introduction to contemporary Japan in its cultural context. Emphasis is on the unique features of the Japanese way of life in terms of Japanese values, social system, and cultural background. (F, Sp)

SPAN 189 Seminar: Spanish for Hermandad 3
Semester Prerequisite: SPAN 110Successful Score on Spanish Placement Test
Designed for persons who have knowledge of Spanish, and wish to develop conversational as well as reading skills in the language. Students learn practical vocabulary, and essential grammar for expressing themselves in Spanish. They become familiar with different aspects of the Hispanic culture through readings, informal lectures, and audio-visual presentations. (F, Sp, Su)
FACULTY AND STAFF DIRECTORY

ABDO, Saide
Director, Public Safety
A.G. Lansing Community College

AHMED, Kinadja
Instructor, Math/Science
B.S. Michigan State University, M.S. Bowling Green State

ALFARO, Rogelio R.
Associate Professor-Counselor, Counseling Services
B.A. Michigan State University, M.A., Michigan State University

ALLEN, Richard L.
Director, Administrative Applications, Information Technology and Planning
A.B. Lansing Community College, B.A., Cleary College

AZIZA, Alex M.
Professor, Science
B.S. Massachusetts Institute of Technology, M.S., Michigan State University

BALDWIN, Robert L.
Associate Professor, Continuing Professional Education
B.A. Michigan State University

BARCELON, Doreen D.
Associate Professor, Business Careers
B.S., Michigan State University, M.A., Michigan State University

BARKS, Kay E.
Professor, Math and Computer Science
B.S. Michigan State University, M.S., Michigan State University

BARNETT, Dorothy P.
Associate Professor, Technology Careers
B.A. Nazareth College, M.A. University of Notre Dame

BEAVERS, Claude R.
Associate Professor-Counselor, Counseling Services
B.S. University of Wisconsin, M.A., University of New Mexico

BECK, Norman A.
Professor, Humanities and Performing Arts
B.A., University of Rhode Island, M.A., University of Rhode Island, Graduate Study, Michigan State University

BECK, Stephen
Assistant Professor, Technology Careers
B.A. University of New Hampshire

BELL, Andrea H.
Coordinator, Counseling, Counseling Services
B.A. Michigan State University, M.S.W., Michigan State University

BELL, Vanessa
Assistant Director, Financial Aid
B.B.A. Detroit College of Business

BENDER, Kathleen
Lift Technician, Technology Careers
A.G. Lansing Community College

BENEDICT, Martha A.
Coordinator, Community Education and Services
B.A. University of Michigan, M.A., Specialist in Aging Certificate, University of Michigan

BENNETT, Catherine
Professor, Human, Health and Public Service Careers
B.A. University of Wisconsin, M.S., University of Wisconsin

BENTLEY, Robert H.
Interim Director of Instruction, Student and Academic Support
B.A. Pacific University, M.A., Pacific University, Graduate Study, University of Nevada

BERGERON, Jack
Associate Professor, Technology Careers
B.F.A., Michigan State University, M.A., Central Michigan University

BERGERON, Pamela
Professor, Human, Health and Public Service Careers
A.A. Ferris State College, B.S., Ferris State College

BETTISON, Charles H.
Dean, Community Services and Continuing Education
B.S. Central Michigan University, M.A., Central Michigan University, Ph.D., Michigan State University

BHURJA, Satnam Singh
Professor, Social Science
B.T. Punjabi University, M.Ed., Punjabi University, M.A., Punjabi University, Ed.D., Utah State University

BLANCHARD, William G.
Professor, Technology Careers
B.A., Michigan State University, M.A., University of Southern California

BOLLMAN, James A.
Director, Business Services
B.A., St. Louis University, ITA Insurance Certificate, Michigan State University, Graduate Study, Assumption College and Seminary, Chaska, MN

BOUCK, Robert J.
Assistant Professor, Business Careers
A.A., Lansing Community College, B.A., Michigan State University, M.A., Michigan State University

BOUTH, Charles
Assistant Professor, Human, Health and Public Service Careers
A.S., Lansing Community College, B.S., Michigan State University, M.S., Michigan State University, Ed.D., Michigan State University

BRAMER, George R.
Coordinator, Academic Affairs, Liberal Studies
A.S. Drury College, M.A., University of Notre Dame, Ph.D., University of Notre Dame

BREAMER, Jennifer
Associate Professor, Counseling Services
B.A., Central Michigan University, M.A., Central Michigan University, Ph.D., Michigan State University

BROWN, Mary H.
Professor, Math/Science
B.S., Central Michigan University, M.S., Central Michigan University

BUCHER, Jacqueline C.
Assistant Coordinator, Language Skills
B.A., Southern Bible College

BURKE, Theodore
Professor, Technology Careers
A.A. Alpena Community College, B.A., Michigan State University

BUSDIECKER, Gertrude
Instructor, Science
B.A., Rutgers University, M.A., University of Illinois, Ph.D., Ohio State University

BUTTERMAN, Geraldine
Professor, Science
A.B. Calvin College, M.A., University of Michigan

BYRNE, Deborah D.
Coordinator, Humanities and Performing Arts
B.M., Michigan State University, M.M., Michigan State University

CAMSFIELD, John H.
Director, Counseling, Counseling Services
B.A. Michigan State University, M.A., Michigan State University, Ed.D., Western Michigan University

CARADINE, Bruce W.
Co-Director, Physical Plant
B.S. Central Michigan University, M.A. Central Michigan University

CARLISLE, Harold R.
Transportation Training Specialist, Technology Careers

CARLSON, Stephen C.
Associate Professor, Science
B.A., Western Michigan University, Ph.D., Purdue University

CAROL, Mary M.
Assistant Professor, Humanities and Performing Arts
B.F.A. University of Montana, M.A., Columbia University

CARPENTER, Trudy G.
Instructor, Language Skills
B.A. Michigan State University, M.A. Northeastern Illinois University

CARTWRIGHT, Brenda
Associate Professor, Human, Health and Public Service Careers
B.S. Ball State University, M.S., Indiana University

CHIARAVALLI, Trudy K.
Professor, Business Careers
B.A., University of Michigan, M.B.A., Michigan State University

CHIWOCZA, Tapara A.
Associate Professor, Humanities and Performing Arts
B.A., Colgate University, M.A., Michigan State University, Ph.D., Michigan State University

CLARK, LuAnn
Assistant Professor, Science
B.S. Aquinas College, M.S., Michigan State University

COOK, Donald M.
Associate Professor-Counselor, Counseling Services
B.A/B.S. University of Illinois, M.A., Michigan State University

264
COOK, Brenda
Assistant Professor, Human, Health and Public Service Careers
A.A.S., Lansing Community College

CSONDOR, Dennis
Lab Technician, Technology Careers
B.S., Michigan State University

CUDDINGTON, Paula D.
Director, Public Information
B.A., Michigan State University, M.A., Michigan State University

DARR, William R.
Director, Special Projects, Administrative Services
B.S., Michigan State University, M.A., Michigan State University

DAVIDSON, David J.
Assistant Director of Personnel
B.S., University of Dayton; M.A., Michigan State University

DAVIS, Nancy
Coordinator/Minority Outreach and Recruitment, Enrollment Services
B.S., Michigan State University, M.S., Central Michigan University

DECK, Sally Ann
Program Director, Dental, Human, Health and Public Service Careers
B.S., University of Michigan; M.S., University of Michigan

DENARDI, William F.
Chair, Technology Careers
B.S., University of Minnesota, M.A., Western Michigan University

DOWNEY-GREER, JeEllen
Assistant Professor, Language Skills
B.A., Michigan State University, M.A., Michigan State University

DUCAT, John C.
Professor, Social Science
B.A., Michigan State University, M.A., Michigan State University, Ph.D., Michigan State University

EDMUND, Peter A.
Professor, Humanities and Performing Arts
B.A., University of Richmond; M.A., University of Richmond, Diploma in Advanced Graduate Study, Michigan State University

EGLESTON, William
Professor, Technology Careers
A.A.S., Ferris State College; B.S., Ferris State College; M.A., Michigan State University

EICHER, Richard L.
Instructor-Counselor, Entry Services
B.A., Michigan State University, M.A., Michigan State University

ELSEEA, William R.
Coordinator, Data Base Services, Information Technology and Planning Certificate, Lansing Community College, Certificate, Data Processing, Michigan State University

ENGSTROM, Paul W.
Co-Director, Physical Plant
B.A., Michigan State University, M.B.A., Michigan State University

EURE-HARRIS, Caridad
Assistant Professor-Counselor, Counseling Services
B.A., Temple University, M.A., Michigan State University

EVERS, Stanley R.
Dean, Careers Division
B.S., Wayne State University; M.A., Central Michigan University

EVERY, Robert A.
Coordinator, Physical Fitness and Wellness
A.A., Lansing Community College; B.S., Northwood Institute; M.A., Michigan State University

FARLEY, Kimberly
Lab Technician, Instructional and Student Support
A.A., Lansing Community College; B.A., Michigan State University, M.S., Wayne State University

FAIRBROTHER, John
Assistant Professor, Business Careers
A.A., Lansing Community College; B.S., Michigan State University

FERRETTINO, Robert C.
Director, Marketing Services
B.S., Northern Illinois University, M.B.A., Northern Illinois University, J.D., Cooley Law School

FINCH, Roxanne A.
Program Director, Emergency Medical Services and Fire Science, Human, Health and Public Service Careers
B.S., Michigan State University

FOLK, Duane
Teaching Technician, Technology Careers

FRANK, Arthur V.
Professor, Physical Fitness and Wellness
B.S., Central Michigan University, Graduate Work, Michigan State University

FRANK, Thomas L.
Dean, Information Technology and Planning
A.B., Columbia University, M.A., Wayne State University, M.Ed., Frostburg State College; Ph.D., University of Maryland

GARRET, Mary
Assistant Professor, Business Careers
B.A., Wayne State University; M.Ed., Wayne State University, Ph.D., Michigan State University

GARRISON, Mary Lou
Professor-Counselor, Counseling Services
B.S., Western Michigan University, M.A., Western Michigan University; M.S., Western Michigan University

GARTNER, Ronald
Professor, Technology Careers
B.S., Central Michigan University; M.A., Central Michigan University

GORTON, Ralph J.
Professor, Science
A.S., Northwestern Michigan College; B.S., Michigan State University, M.S., Michigan State University

GUNN, John H.
Transportation Training Specialist, Technology Careers
A.S., Blue Mountain Community College

GREGG, David G.
Assistant Professor, Business Careers
A.B., Lansing Community College; B.S., Southern Illinois University

GREEN, Evelyn L.
Assistant Professor, Science
B.A., University of Illinois; M.A., University of Missouri

GREENE, James C.
Director, Media Services, Instructional and Student Support
B.A., Providence College; M.Ed., Boston College; M.A., Michigan State University, Ph.D., Michigan State University

GRIFFIN, Catherine E.
Instructor, Math/Science
B.A., Calvin College; M.A., Western Michigan University

GRUNER, Daniel R.
Lab Technician, Technology Careers
A.S., Lansing Community College

GRUNER, Catherine E.
Instructor, Math/Science
B.A., Calvin College; M.A., Western Michigan University

HAGGADONE, David L.
Instructor, Technology Careers
B.A., Michigan State University, M.A., Michigan State University

HAGGERTY, Patrick A.
Instructor, Business Careers
B.S., University of Michigan; M.S., Eastern Michigan University

HAMILTON, Kenneth C.
Associate Professor, Social Science
B.A., Western Michigan University, M.A., Western Michigan University

HANEY, Deanne K.
Chair, Humanities and Performing Arts
B.A., University of Kansas, M.A., San Francisco State University, Ph.D., University of Michigan

HANESKI, Deanne D.
Professor, Technology Careers
B.S., St. Cloud State University, M.S., Purdue University

HANLEY, John
Professor, Technology Careers
B.A., Michigan State University, M.B.A., Michigan State University

HANSON, Arthur M.
Instructor, Technology Careers
B.S., Louisiana State University, B.J., University of Missouri; M.A., University of Minnesota
HARDY, Mary Jo
Assistant Professor, Physical Fitness and Wellness
A.D. Delta College; B.S., Michigan State University; M.A., Michigan State University

HARRIED, Lynee
Director, Special Projects, Executive Office
B.S., Central Michigan University; M.A. Michigan State University, Ph.D., Michigan State University

HARRIS, Denise E.
Director, Student Life, Instructional and Student Support
B.A., Michigan State University

HARRIS, Marvin
Assistant Professor, Business Careers
B.S. Coppin State University, M.A. Morgan State University

HARRIS, Reginald N.
Lab Technician, Technology Careers
A.A.S., Lansing Community College

HARTWIG, Joan E.
Professor, Counselor, Entry Services
B.S. Michigan State University, M.A. Michigan State University

HARTON, Carol A.
Instructor, Human, Health and Public Service Careers
B.A. Michigan State University

HAYNER, David A.
Transportation Training Specialist, Technology Careers

HAYS, Patricia
Professor, Continuing Professional Education
B.S.N. Michigan State University, M.S.N. Wayne State University

HEARNS, John W.
Assistant Director, Entry Services
B.S. Alcorn State University, M.A., Michigan State University

HEISLER, Gary
Professor, Business Careers
A.B., Lansing Community College; B.S., Manchester College, M.A.T., Michigan State University

HERDER, Dale M.
Professor, Language Skills
A.A. Muskegon Community College; B.A. Michigan State University, M.A., Michigan State University, Ph.D., Michigan State University

HICKER, Terry
Director, LCC Foundation
B.A. Indiana University, M.A. Michigan State University

HILL, Gilbert M.
Associate Professor, Counselor, Entry Services
A.A. Lansing Community College; B.S., Michigan State University, M.A. Michigan State University

HILLMAN, Mary
Assistant Professor, Business Careers
B.A., Central Michigan University, M.A. Michigan State University

HINES, Arlen
Assistant Professor, Technology Careers
B.A. Michigan State University

HOLT, Darrel T.
Instructor, Communication
B.A. California State College, M.A., Regent University

HOPKINS, Howard S.
Professor, Language Skills
B.A. Michigan State University, M.A., Michigan State University, Graduate Study, Michigan State University

HOYET, Kathleen
Instructor, Continuing Professional Education
A.A. Lansing Community College

HOWELL, Richard H.
Associate Professor, Business Careers
B.S. Manchester College

HUUSON, Cathie
Associate Professor, Business Careers
A.A. Lansing Community College; B.A. Eastern Michigan University; M.A., Michigan State University

HUGHES, Patricia M.
Associate Professor, Science
B.S. State University College of New York, M.S. Michigan State University

HURLONG, Granville W.
Assistant Professor, Technology Careers
A.D. Lansing Community College; B.A. Michigan State University

IDALSKI, Robert L.
Professor, Technology Careers
A.S. Alpena Junior College, B.S. Michigan State University, M.A., Michigan State University

INGRAM, Michael L.
Teaching Technician, Physical Fitness and Wellness
A.D. Lansing Community College

INMAN, Thomas
Assistant Professor, Technology Careers
A.A.S. Ferris State College

IVENS, Ruby
Assistant Professor, Technology Careers
B.S. Western Michigan University, M.A., Western Michigan University, M.B.A., Western Michigan University, Ph.D., Western Michigan University

JACOT, Gene F.
Professor, Technology Careers
B.S., Michigan State University, Graduate Study, Michigan State University

JONES, Clint
Teaching Technician, Technology Careers
A.S., Lansing Community College

JONES, J. Howard
Professor, Math and Computer Science
B.S., Illinois State University, M.A.T. Michigan State University, M.S., Michigan State University, Ph.D., Michigan State University

JULIANO, Anthony J.
Training Grant Coordinator, Contracted Training and Services
B.A. Michigan State University, M.A. Michigan State University

KENDRIGAN, Mary Lou
Assistant Professor, Social Science
B.A. Marquette University, M.M. University of Wisconsin, Ph.D. University of Wisconsin

KESSELER, Thomas J.
Coordinator, Budget and Grants Management, Administrative Services
A.B. Lansing Community College

KIM, Tai Sung
Director, International Programs
B.S. Seoul National University, M.A. Michigan State University, Ph.D., Michigan State University

KLOECHNER, Gerald J.
Director, Financial Services, Administrative Services
B.A. Michigan State University, M.M. Aquinas College

KNAPP, Jane
Instructor, Technology Careers
B.A. Michigan State University, M.B. University of Texas at Dallas

KNIPPENDORG, Gary P.
Interim Dean, Liberal Studies
B.S. Concord College, M.A. University of Missouri, Ph.D. Michigan State University

KIGEL, Richard L.
Instructor, Technology Careers
B.S. Western Michigan University

LAFAYE, Daniel C.
Professor-Counselor, Counseling Services
B.S., Central Michigan University, M.S. Michigan State University, Advanced Graduate Study, Michigan State University

LAMBERT, Patricia L.
Program Director, Nursing, Human, Health and Public Service Careers
B.S.N. College of St. Catherine, B.S. Fontbonne College, M.A., Michigan State University

LASALLE, Kenneth J.
Vice President, Administrative Services
B.S. Bryant College, M.S. University of Rhode Island, Ph.D. Boston University

LAWRENCE, Mary C.
Coordinator, Employment Placement Services/Career Exploration and Assessment Center
B.A. University of Illinois, M.Ed., University of Illinois, M.A., Michigan State University

LEA, Dwight A.
Assistant Professor, Technology Careers
A.A., Lansing Community College, B.F.A., Northern Michigan University, B.S. Rochester Institute of Technology

LEE, Alberta
Assistant Director of Personnel
B.B.A. Saginaw Valley State University, M.S. Central Michigan University
LEISTER, Marsha
Director, Publications and Advertising Services, Marketing and Communications
A.A., Lansing Community College

LEWIS, David M.
Transportation Training Specialist/Maintenance, Technology Careers

LIBBY, Teresa
Professor, Human, Health and Public Service Careers
B.S.N. Michigan State University, M.S., University of Michigan

LIGHNER, John W.
Associate Professor, Technology Careers
A.A. and A.S., Lansing Community College; B.S., Ferris State College; M.S., Ferris State University

LIMING, Sarah A.
Professor, Human, Health and Public Service Careers
B.A., St. Lawrence Hospital; B.S., Michigan State University; M.A., Michigan State University

LIU, Lily Pao H.
Associate Professor, Technology Careers
B.S.A., California College of Arts and Crafts

LOMBARDI, Nancy
Director, Instruction, Careers Division
B.A., City University of New York; M.A., Michigan State University

LUCINSKA, William
Instructor, Technology Careers
B.S., Michigan State University

LYLE, Barbara
Coordinator, Access Systems, Instructional and Student Support
B.S., Western Michigan University

MAAR, Allan R.
Professor, Language Skills
B.S., State University of New York; M.A., Michigan State University; Graduate Study, Michigan State University

MACKENZIE, Kenneth F.
Co-Director, User/Technical Services, Information Technology and Planning
B.S., Fordham University; M.S., Michigan State University

MADISON, Sally K.
Professor, Language Skills
A.A., Muskegon Community College; B.A., Wheaton College; M.A., Michigan State University; Specialist's Certificate, Michigan State University

MARINEZ, Rafael
Assistant Director, Financial Aid
B.A., Michigan State University

MARTIN, William T.
Coordinator, Police Academy, Continuing Professional Education

MASTERSON, Medeline M.
Interim Director, Academic Affairs, Liberal Studies
B.A., College of Mt. St. Vincent; M.A.T., Purdue University

MATTSON, David
Teaching Technician, Technology Careers
A.A.S., Lansing Community College

MATTSON, Morton E.
Associate Professor, Math/Science
B.S., Central Michigan University; M.A.T., Michigan State University; Graduate Study, Cornell University

McALEAR, John T.
Professor, Language Skills
B.A., Michigan State University; M.A., Michigan State University

McCREA, Bruce
Professor, Social Science
A.B., Miami University of Ohio; M.A., Yale University

McEANLEY, Stephen A.
Director, Contracted Training and Services
A.A., Lansing Community College; B.A., Michigan State University; M.A., Michigan State University

McKee, Richard G.
Instructor, Technology Careers
B.S., University of Michigan

McMILLER, Queen E. Foreman
Director, Affirmative Action
B.S., Illinois State University

MEEKER, Connie J.
Professor, Human, Health and Public Service Careers
B.S.N., University of Delaware; M.S., University of Arizona

MEIER, Dennis E.
Professor, Social Science
B.A., Michigan State University; M.A., Michigan State University

MEGACHE, Ronald A.
Professor, Technology Careers
B.A., Michigan State University; M.A., Michigan State University

MENEFEE, Eve M.
Lab Technician, Counseling Services
B.A., Michigan State University

MANN, Timothy A.
Professor, Language Skills
B.A., Grand Valley State College; M.A., Michigan State University

MILLS, Maria C.
Professor, Humanities and Performing Arts
School of Voice and Dance of Spain

MILTON, Kirby M.
Title IX/AA/SSV Director, Executive Office
B.A., Michigan State University; M.A., Michigan State University

MIRKEL, Dorothy J.
Associate Professor, Human, Health and Public Service Careers
B.S.N., Hackett Hospital School of Nursing; B.S., Michigan State University; M.S.N., Wayne State University; M.A., Michigan State University

MITCHELL-COLE, Tammy L.
Assistant Professor, Counseling Services
B.A., Kentucky State University; M.A., Michigan State University; Doctoral Candidate, Michigan State University

MOELLER, Victor A.
Coordinator, Instructional Services
B.S., Andrews University

MOHAMEDULLA, Ahsan
Instructor, Technology Careers
B.S., University of India; M.S., Oklahoma State University; M.S.E.E., University of Michigan

MORAN, James E.
Lab Technician, Counseling Services
B.S., Northern Michigan University; M.P.A., Western Michigan University

MORENO, Jean F.
Director, Extension and Community Education
A.A., Holland Community College; B.A., Michigan State University; M.A., Ferris State University

MORROW, Addie J.
Professor, Counseling Services
B.S., Eastern Michigan University; M.A., Western Michigan University

MORE, Dennis H.
Coordinator, Criminal Justice-Continuing Education, Continuing Professional Education
B.S., Michigan State University; M.A., Michigan State University

MORTENSON, Catherine
Coordinator, Instructional Services
B.S., Andrews University

MOTZ, William
Professor, Business Careers
B.A., Michigan State University; M.B.A., Michigan State University

MULL, Richard D.
Assistant Director, Instructional and Student Support
B.A., Michigan State University; Graduate Study, Michigan State University

NELSON, Richard B.
Assistant Professor, Social Science
B.S., Central Michigan; M.A., Michigan State University

NEVAD, James W.
Professor, Physical Fitness and Wellness
M.A., Marygroth State College; Graduate Study, Michigan State University

NELSSON, Carl J.
Coordinator, Transportation/Airframe and Powerplant, Technology Careers

NOBIS, Elizabeth L.
Assistant Professor, Business Careers
B.S., Western Michigan University; J.G. Thomas M. Cooley Law School

NOLSON, Donna
Professor, Communication
B.A., University of Michigan; M.A., University of Michigan

NOVAK, David L.
Associate Professor, Social Science
B.A., Judson College; M.A., Western Michigan University

267
RUSSSELL, Eugene N.  
Professor, Technology Careers  
B.S. Michigan State University; M.S., Michigan State University. Graduate Study, Michigan State University and Oklahoma State University

RYSZTAK, Marcia  
Assistant Professor, Human, Health and Public Service Careers  
B.A., Michigan State University; M.A., Michigan State University

SAND, Ruth A.  
Professor, Business Careers  
B.A., Michigan State University

SAWYER-BURLESON, Suzanne L.  
Instructor, Reference Librarian, Instructional and Student Support  
B.A., Southern Illinois University; M.S., Wayne State University

SCHEIB, Martha  
Acting Director, Consultation Training, Information Technology and Planning

SCOTT, James F.  
Professor-Counselor, Entry Services  
Certificate, Advanced Emergency Medical Technology, Lansing Community College; B.S., Michigan State University; M.A., Michigan State University. Graduate Study, Michigan State University

SEELYE, Allan  
Transportation Training Specialist, Technology Careers

SEPULVEDA-VAZQUEZ, Gloria  
Professor, Reference Librarian, Instructional and Student Support  
B.A., University of Puerto Rico; M.A., Michigan State University. M.A.L.S., University of Michigan

SCHAFFER, Mariam  
Professor, Business Careers  
B.A., University of Northern Iowa; M.A., Michigan State University; Ph.D., Michigan State University

SHAH, Vikram  
Professor, Business Careers  
S.E., Gujarat University; B.S., University of Michigan; M.B.A., Michigan State University

SHEETS, Donald  
Instructor, Technology Careers  
A.S., Lansing Community College; B.S., Ferris State University

SHULMAN, Bennett D.  
Professor, Business Careers  
B.S., Syracuse University; J.D., Temple University

SOLOMON, Douglas P.  
Assistant Professor, Humanities and Performing Arts  
B.A., Northern Michigan University; M.A., University of Hawaii; Doctoral Candidate, Michigan State University

SMITH, Delesia  
Coordinator, Business Development Center, Contracted Training and Services  
A.B., Lansing Community College

SMITH, John Dale  
Director, Conference Services/Interim Chair, Physical Fitness and Wellness  
M.S., Bowling Green State University; M.M., Michigan State University

SMITH, Nan L.  
Director, Accounting and Payroll

SMYDRA, Stanley  
Instructor, Technology Careers  
B.S., Michigan State University

SMYTH, Marc  
Coordinator, Telelearning Services, Instructional and Student Support  
A.B., Lansing Community College

SOMERS, Maribeth  
Assistant Professor, Nursing, Human, Health and Public Service Careers  
H.N., Lansing Community College; B.S.N., University of Michigan-Flint; M.S.N., Michigan State University

SPANGLER, Jerry L.  
Professor, Technology Careers  
B.S., Siena Heights College

SPARROW, Vicki  
Assistant Professor, Human, Health and Public Service Careers  
A.A.S., Ferris State College

STARK, Judith D.  
Project Coordinator/Tech Prep, Careers Division  
B.A.S., Siena Heights College

STEARNES, Barry G.  
Professor-Counselor, Counseling Services  
B.A.E., University of Florida; M.Ed., University of Florida

STEFFENS, David B.  
Director, Operations and College Technical Support, Information Technology and Planning  
A.B., Lansing Community College; B.A., Davenport College

STEWART, M. James  
Professor, Math and Computer Science  
B.A., Michigan State University; M.S., Michigan State University; Ph.D., Michigan State University

STIMSON, Rebecca J.  
Activity One Coordinator, Title III, Executive Office  
B.A., Michigan State University, Graduate Study, Michigan State University

SULLIVAN, Ellen  
Director, Community Education and Services  
B.A., Scott Hill College; M.S.W., University of Michigan; Specialist in Aging Certificate, University of Michigan; M.P.H., University of Texas Austin

SYKES, Abel E., Jr.  
President  
B.A., University of Missouri; M.A., University of Missouri; Ed.D., University of California, Certificate, Harvard School Business

TENNIS, Gayland L.  
Program Director, Transportation/Aviation, Technology Careers  
B.A., Michigan State University; M.A., Central Michigan University

THEROUX, John  
Program Director, Transportation/Truck Driver Training, Technology Careers  
B.S., Murray State University

THOMAS, Carol M.  
Instructor, Human, Health and Public Service Careers  
B.A., Grand Valley State University

THOMAS, Morris O.  
Professor, Social Science  
B.S., Northwestern Michigan College; M.A., Michigan State University

THOMAS-GILKEY, Bettye  
Lab Technician, Counseling Services  
A.A., Kellogg Community College; B.A., Spring Arbor College

THOMMEN, John  
Associate Professor, Information Technology and Planning  
A.A.S., Ferris State College; B.S., Ferris State College

THOMPSON, George E.  
Program Director, Imaging Technology, Human, Health and Public Service Careers  
B.A.S., Siena Heights College; M.A., Marygrove College

TOOMEY, Robert L.  
Associate Professor, Technology Careers  
A.A., Lansing Community College; F.A.A. A. and P. License. Alabama Institute of Technology

TRAN, Lui N.  
Coordinator, Limited English Proficiency Services, Counseling Services  
B.S., University of Saigon; M.S., University of Saigon. D.S.C., University de Marseille (France)

TROSTY, Francia  
Associate Professor, Technology Careers  
B.A., Hunter College, CUNY; M.F.A., Michigan State University

TURCOTTE, Patrick C.  
Professor, Contracted Training and Services  
A.S., Lansing Community College; B.S., Central Michigan University

TURNER, F. Ray  
Interim Director, Financial Services/Communication, Liberal Studies  
B.A., Michigan State University

VANKEPMEN, Gary  
Interim Director, Human Resources, Liberal Studies  
B.A., Hope College, Ph.D., Michigan State University

VOSSLER, Stephen L.  
Assistant Professor, Technology Careers  
B.S., Michigan State University

WALCZAK, Patricia J.  
Assistant Professor, Business Careers  
A.B., Lansing Community College; B.A., Michigan State University

WALKER, Rosalie  
Director, Human Resources/Communication, Careers Division  
B.A., St. Lawrence Hospital School of Nursing; B.A., Spring Arbor College

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The following 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 Shiras Avenue Street.
2. Visitor parking is located along the south wall of the Courtyard (on your left as you drive in). All visitor spaces are posted with signs.
3. Attach your visitor parking permit (using the sticky tape) to the left rear window (not the side window) so the permit is visible from the rear of the car.
4. Throw away your visitor parking permit (after the expiration date) when use is completed.
CAMPUS FACILITIES MAP

Building Information
1A. Office Unit B (OUB)
1C. Office Unit C (OUC)
1F. Office Unit F (OUF)
1G. Old Central (OC)
2. Photography Center (PC)
3. Administration (ADM)
4. North House (NH)
5. Hermann Conference Center Complex (HCC)
5A. Hermann Conference Center
5B. Rogers-Carmer House
5C. LCC Board Room
6. Dart Auditorium (BRT)
7. Turner House (TH)
8. Student Personnel Services (SPS)
9. Arts & Sciences (A&S)
10. LCC Parking Ramp
    (Quick Card and Cash)
11. Gannon Vocational Technical Center (GVT)
12. Academic & Office Facility (AOF)
13. Student Employee Parking Lot
    (Student Employee Parking Card Only)
14. Parking Lot (Quick Card Only)
15. Continental Building (CB)
16. City Parking Ramp
    (Quick Card and Cash)
17. Academic Facility (Under construction; expected completion early 1997) Due to
    construction of the new academic facility at the corner of Shiawassee Street and
    Capitol Avenue it may be advisable to select an alternate route around this
    intersection.

Emergency Phone
Handicapped Entrances
Handicapped Entrances with Electronic Doors
(Push-button electronic door at 2nd floor entrance of GVT from Parking Ramp)
Handicapped Parking (Parking on 2nd floor of Parking Ramp and other marked spaces)
LEARNING CENTER LOCATIONS
EXTENSION AND COMMUNITY EDUCATION

CHARLOTTE
Charlotte High School

HOLT
Holt Computer Center
Holt High School
Holt Junior High School

MASON
Capital Area Career Center
Heartwood School
Mason High School

S.I.T.E.S.
Byron High School
Corunna High School
Durand High School
Laingsburg High School
Monroe High School
New Lothrop High School
Perry High School
Shiawassee Interactive Television

DANSVILLE
Dansville High School

HOWELL
Howell Center
Howell High School
Livingston Educational
Service Agency

ST. JOHNS
St. Johns High School

DEWITT
Dewitt High School

OKEMOS
Okemos Community
Education Center
Okemos High School

WAVERLY
Waverly High School
Waverly Middle School

EAST LANSING
Bailey Community Center
East Lansing High School

OWOSSO
Owosso High School

WILLIAMSTON
Williamston Community Center
Williamston High School

FOWLERVILLE
Fowlerville High School

PORTLAND
Portland High School

GRAND LEDGE
Grand Ledge High School

For more information call the
Extension and Community Education Office
at (517) 483-1860

- LCC classes are held at local schools in partnership with Community Education Offices in these locations.