2003-2005 Catalog

Lansing Community College
Where Success Begins
LCC: SUCCESS BEGINS HERE

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

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

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

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

Lansing Community College—Success Begins Here!
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Please keep this catalog as a reference to the learning opportunities available at Lansing Community College. Education is a lifelong process, and LCC continues to be a resource for its students throughout the nation and the world. Success begins at LCC, but continued success enriches for an entire lifetime.
MISSION
Lansing Community College exists so that the people it serves have learning and enrichment opportunities to improve their quality of life and standard of living.

VISION
Serving the learning needs of a changing community.

GUIDING PRINCIPLES
1. LCC will be a focused "Comprehensive Community College," offering learning opportunities in career and workforce development, general education, developmental education, and personal enrichment.
2. LCC will maintain and support a well-qualified, committed faculty and staff who utilize both proven traditional and progressive student-centered learning approaches.
3. LCC commits to providing the highest level of quality in its programs and services and will maintain high expectations of its students.
4. LCC will be flexible, affordable, and accountable, continuously improving student learning and support services through the assessment of measurable outcomes.
5. LCC will strive to be "state of the art" in all that it does, while pursuing a select number of "cutting edge" initiatives.
6. LCC will be connected to the world, culturally and technologically.
7. LCC seeks cooperative relationship with both private and public organizations, pursuing growth not as an end in itself but only when it best serves student and community needs.
8. LCC will prepare those it serves to thrive in a diverse world by reflecting that diversity in its staffing, planning, and allocation of resources.
9. LCC within its broader purpose of serving the entire community in diverse ways, recognizes a special responsibility to young adults, those from lower income brackets, and those requiring developmental academic or entry-level career skills.
10. LCC will manage its finances in a responsible manner; allocating resources and achieving efficiencies to best serve the priority needs of its students and the taxpayers who support its operation.
11. LCC is a dedicated community member working for the betterment of all.
Lansing Community College

BOARD OF TRUSTEES

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

Welcome to Lansing Community College!

Whether you are learning new career skills, preparing to transfer to a four-year institution, or developing a personal interest, all of us at LCC are committed to meeting your needs and helping you accomplish your goals.

Lansing Community College is one of the nation's most respected higher education institutions. Our state of the art technology, diverse course offerings and highly trained faculty and staff are ready to help you develop your talents and skills in the academic area of your choice.

Each year, nearly 34,000 students enroll in more than 180 degree and certificate programs and nearly 1,700 different courses. Our main campus is located in the heart of downtown Lansing, a few blocks from the State Capitol. We also have more than 25 convenient learning centers all around mid-Michigan, including the Clinton County Center, the Livingston County Center and the Harry Hill Center for Academics and Technology. LCC is a leader in on-line education. Each semester thousands of students enroll in our virtual classes.

I encourage you to get involved in the college experience. Whether it is on a sports team, involved in a volunteer opportunity, or participating in a cultural program, learning takes place in a variety of settings at LCC. Many extracurricular activities are designed to provide hands-on experiences to prepare students for their chosen professions.

Student success and achievement are our focus at Lansing Community College. We offer a quality education that is convenient, affordable, accessible, and one that meets your needs. Join us at ... Lansing Community College ... where success begins.

Respectfully,

[Signature]

Paula D. Cunningham
President
Lansing Community College
### Business & Media Careers Division

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ACADEMIC CALENDAR

Summer Semester 2003
Classes Begin .............................................. June 6
Independence Day ........................................... July 4
Last Class Day .............................................. August 1

Fall Semester 2003
Prep Days .................................................. August 18–20
Classes Begin ............................................... August 21
Labor Day .................................................... September 1
Thanksgiving ............................................... November 27–28
Last Class Day .............................................. December 14

Spring Semester 2004
Prep Days .................................................. January 5–9
Classes Begin ............................................... January 10
MLK Holiday ................................................. January 19
Spring Break ............................................... March 8–14
Last Class Day .............................................. May 7

Summer Semester 2004
Classes Begin .............................................. June 7
Independence Day ........................................... July 5
Last Class Day .............................................. August 2

Fall Semester 2004
Prep Days .................................................. August 23–25
Classes Begin ............................................... August 26
Labor Day ..................................................... September 6
Thanksgiving ............................................... November 25–26
Last Class Day .............................................. December 19

Spring Semester 2005
Prep Days .................................................. January 3–7
Classes Begin ............................................... January 8
MLK Holiday ................................................. January 17
Spring Break ............................................... March 7–13
Last Class Day .............................................. May 6
POLICIES, PROCEDURES, AND REGULATIONS

ADMISSIONS INFORMATION

GENERAL ADMISSION CRITERIA

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

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

GENERAL ADMISSION PROCEDURES

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

Applicants may mail, fax (517) 463-9965, or bring applications to the Enrollment Services office located in the Gannon Vocational-Technical Center, Suite 2200, or online at www.lcc.edu.* Apply online via the internet at our web address http://www.lcc.edu/admissions/apply online form.htm. Applicants who are admitted to LCC will receive notification and information regarding registration procedures. Applicants denied admission will receive a letter stating the reason for denial and explaining the appeal process (see Appeal Process for Denial of Admission).

ACADEMIC ASSESSMENT AND PLACEMENT TESTING FOR STUDENT SUCCESS

General Information

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

Many courses at LCC have minimum skill level requirements in reading, writing, and mathematics. These levels must be met before a student will be permitted to enroll in those courses. Skill levels are listed along with other prerequisites required for each course in the Lansing Community College Catalog, on the Course Schedule, and on the College's World Wide Web home page http://www.lcc.edu/.

Students meet these skill prerequisites either by achieving the required scores on placement tests or successfully passing specific courses at LCC. (See Other Options to Meet Skill Prerequisites in this section for other alternatives.) Students who have attended LCC previously may need to take the placement exams to gain admission to these courses, or retest on one or more of the placement tests. An advisor or counselor can determine if this is needed. Student orientation is available at www.lcc.edu/orientation, or by calling 483-5223. New students should complete all assessment testing prior to completing orientation.

The department offering the course determines any exceptions to prerequisites or skill levels.

What the Tests Are Like

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

The results of the tests are available immediately.

Where Testing Centers Are Located

Drop-in placement testing is available on-campus in the Assessment Center in room 2100 Gannon Vocational-Technical Center. Testing hours and information can be obtained by calling (517) 482-2600. Placement tests are also available at the off-campus Learning Centers. Contact the off-campus Learning Centers or the LCC Extension and Community Education Office, (517) 482-1868, for more information.

Other Options to Meet Skill Prerequisites

Students who have taken the SAT, the ACT, or Advanced Placement courses should have their scores sent to the LCC Enrollment Services/Admissions Office. The results may establish reading and writing and/or math levels, which may meet some course prerequisites. The Advanced Placement examination results may also result in the awarding of credit for a specific course(s).

Students who have earned credits from one or more accredited colleges may be admitted to LCC with an official transcript sent to the LCC Enrollment Services/Admissions Office. An evaluation of transfer credits will determine if any of the courses meet skill prerequisites.

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

Academic Advising for Student Success

All new students will receive an advisor or counselor contact upon admission to the College. Academic advisors and counselors are available to provide information on skill prerequisites, help students plan class schedules, discuss curricular choices, and provide academic and personal support. Students are encouraged to meet with an advisor or counselor prior to their first semester and at least annually thereafter. As students progress in their program of study, advisors or counselors can identify courses that remain to be completed. Counseling and Advising has advisors and counselors in Room 2300 of the Gannon Vocational-Technical Center, (517) 483-1804.

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

Academic advisors and counselors are also available during special advising times in the off-campus Learning Centers. Contact the Learning Center or the LCC Extension and Community Education office, (517) 482-1868, for additional information.

SPECIAL PROGRAM/SPECIAL CIRCUMSTANCE ADMISSION

Selective Admission Programs

The programs listed in this section are selective admission programs. Admission to selective admission programs is on a competitive basis, and these programs have program admission requirements beyond those required for admission to the College. Admission to Lansing Community College does not guarantee admission to a selective admission program. Students wishing to apply for admission to a selective admission program should contact the Enrollment Services Office for further information by calling (517) 483-1254, or by writing 1121 Enrollment Services/Admissions Office, Lansing Community College, PO Box 40010, Lansing, MI 48901-7210.

- Dental Hygienist Program, Associate in Applied Science
- Diagnostic Medical Sonography, Associate in Applied Science
- Fire Academy, Certificate of Completion
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 in accordance with the Student Exchange and Visitor Information System (SEVIS) as regulated by the U.S. Immigration and Naturalization Service (USINS). In accordance with USINS regulations, any individual who is not a United States citizen and who has been admitted to the United States in a temporary, nonresident status will be classified as an international student at Lansing Community College. Individuals who have refugee, immigrant, or resident alien status are not international students.

The visa classification of each international applicant determines the admission requirements and the attendance regulations applied to the applicant. For details on the requirements for international admission, the applicant should refer to the International Student Admissions Application Packet. To request the application packet, contact 1121-ENROLLMENT SERVICES/ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48902-9901.

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

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

Admission to LCC as an international student will be considered after receipt of the application and all required documents. Applicants outside the United States are advised to apply as early as possible to allow for visa delays, to obtain visas and exit permits, and to make travel arrangements. The College must receive all admission materials from applicants outside the United States no later than ten weeks prior to the first day of international student orientation for the semester of attendance.

The Enrollment Services/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 classes.

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

The International Student Services Committee has been established in the Division of Student and Academic Support with the following membership:
1. International Admissions Specialist (Chairperson)
2. Enrollment Services Administrator
3. Director of International Programs
4. Bilingual Coordinator
5. International Student Counselor
6. A member of the teaching faculty

Dual Enrollment Program

This program is designed to provide an opportunity for qualified high school juniors and seniors to earn college credit. High school credit may or may not be granted according to the discretion of the participating high school. Dual enrollment affords students educational enrichment at 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 high school official at least one semester in advance;
3. Mail or bring the application and letter of authorization to the LCC Enrollment Services/Admissions Office prior to enrolling in classes. Applicants may also submit an online application via the internet at www.lcc.edu.
4. Comply with basic skills assessment and any additional approvals or prerequisites established by the department for the course(s) in which the student wishes to enroll.

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

Special Admission Program

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

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

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

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

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

Nonpublic Home School Program

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

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

Application Procedures for the Nonpublic Home School Program
Applicants must:
1. Complete an application each semester;
2. Obtain departmental/approval for each course in which the student wishes to enroll.

(See Appeal Process for Denial of College Admission for appeal procedures.)
student wishes to enroll each semester.
2. Written consent from the student’s parent/guardian and approval from the
   home school provider is required on the application.
3. Applicants must meet with a Counselor to discuss the student’s educational
   plan each semester.
4. All students must comply with basic skills assessment and any additional
   approvals or prerequisites established by the department for the course(s)
   in which the student wishes to enroll.
5. Applicants must mail or bring the completed application to the LCC
   Enrollment Services Office prior to enrolling in classes.
(See Appeal Process for Denial of College Admission for appeal procedures.)

Guest and International Guest Applicants

Guest and international guest applicants must:
1. Obtain a guest application from the Registrar’s Office of the student’s pri-
   mary college;
2. Submit a completed guest application form to LCC each semester they wish
   to continue in the guest admission category;
3. Mail or bring the guest application to the Enrollment Services/Admissions
   Office prior to enrolling in classes.
Note: International guest students need permission from their designated
school official.
(See Appeal Process for Denial of College Admission for appeal procedures.)

APPEAL PROCESS FOR DENIAL OF COLLEGE ADMISSION

Applicants who meet minimum requirements and are denied admission to the
College may appeal the denial. The decision to admit or uphold denial of admis-
sion will be based upon the individual merits of the appeal. Appeals submitted
without sufficient time to complete the appeal process (eight working days) by the first
day of classes will be reviewed the following semester. The appeal process shall
consist of the following steps:

STEP 1: Admissions Staff Member

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

STEP 2: Director of Enrollment Services

(If the Director of Enrollment Services originally denied admission, the appli-
cant may move directly to Step 3 of the appeal process.) The applicant must sub-
mit his or her appeal in writing to the Director of Enrollment Services at least one
working day prior to the appeal meeting. A decision shall be communicated to
the applicant within two working days of the appeal meeting and provide the applicant
with a written copy of the decision. If the appeal is denied, the Director of
Enrollment Services shall discuss Step 3 of the appeal process with the applicant.
If the applicant wishes to appeal the denial, the Director of Enrollment Services
shall assign the applicant in contacting the Appeals Coordinator.

STEP 3: The Board of Appeals

The Appeals Coordinator shall convene the Board of Appeals within three
working days of the applicant’s appeal to the Board and advise the applicant of the
date, time, and location of the appeal meeting. The Board of Appeals Chairperson
shall notify the applicant of the Board’s decision within three working days from the
date of the applicant’s appeal meeting and provide the applicant with a written
copy of the decision. The Board of Appeals shall consist of the following:
A. The Director of Student Relations
B. A member of the teaching faculty
C. A counselor
D. Appeals Coordinator or his or her designee (as recorder and nonvoting
   member)

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

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

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

HOUSING

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

FINANCIAL AID INFORMATION

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

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

SOURCES OF FINANCIAL ASSISTANCE

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

Scholarships and Awards

Resources that do not have to be paid back, usually awarded for academic
achievement or talent that may or may not be based on need:
• Board of Trustees Awards are awarded to outstanding district high school
   graduates. One recipient each year is selected by each in-district high school.
• Divisional Awards are awarded to outstanding students who are residents
   of the district and who apply directly to the College division or department
   in which the student wishes to study. Students may contact the Enrollment
   Services/Student Financial Aid Office for a Lansing Community College
   Scholarship application booklet.
• Athletic Scholarships are awarded through the Athletic Department.
   Talented athletes should contact coaches in their respective sport areas.
• Michigan Competitive Scholarships are based upon a qualifying SAT exam-
   ination given during the junior and senior years in high school. Students
   may receive an “Honorary” award not based on need or a monetary award
   based upon need.
• Private Scholarships are available through the College or private organiza-
   tions. Please contact the Enrollment Services Office for a LCC Scholarship
   application booklet and information about private scholarships, grants, loans,
   employment, and college transfer scholarships available to LCC students.
• Foundation Scholarships are provided through the Lansing Community
   College Foundation Office.
Grants

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

- Federal Pell Grants are based on need and range from $400 to $4,000 (subject to change).
- Federal Supplemental Educational Opportunity Grants are awarded to high need students who receive Federal Pell Grants.
- Michigan Educational Opportunity Grants are awarded to needy students who have been Michigan residents for at least 12 consecutive months.
- Michigan Adult Part-Time Grants are awarded to self-supporting, part-time (3-11 credits) needy students who have been out of a high school program for at least two years and who have been Michigan residents for at least 12 consecutive months.
- Michigan Tuition Incentive Program (TIP) pays in-district community college tuition and fees for students from low-income families who meet the basic criteria and low-income financial guidelines. Eligible students must be United States Citizens or residents of Michigan according to institutional criteria, must be under 20 years of age, and must apply for certification to the State of Michigan prior to graduation from high school or completing the General Education Development (GED) Certificate.
- Lansing Community College grants are awarded to needy students who do not qualify for Federal Pell Grants on a funding available basis.
- Lansing Community College's Women's Resource Center Grants are available for tuition and child care for displaced homemakers and special populations. Students apply through the Women's Resource Center, Counseling and Advising Center, 21200 E. Michigan Ave., (517) 483-1237 or (517) 483-1904.
- Center for Aging Education Tuition Assistance is available to persons 60 years of age or older for up to four (4) credits per semester. Students must meet moderate income guidelines. Students must apply through the Enrollment Services Department at (517) 483-1200.

Loans

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

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

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

Student Employment

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

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

Special Situation Funds

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

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

HOW AND WHEN TO APPLY

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

1. The completed FAFSA form may be submitted via the Internet (FAFSA on the Web). The URL is http://www.fafsa.ed.gov. All necessary instructions are provided. Please note all signature requirements. The STARTER located in the Enrollment Services Office is available for students to enter the application. Staff is available to assist students with filling the application. The Student Aid Region (SAR) results are then mailed to the student. Processing time is approximately 14 to 21 working days after the student enters the application. Call (517) 483-1200 to schedule an appointment.

2. The completed FAFSA Form may be mailed in the enclosed envelope to the federal processor. In four to six weeks, the processor will send a Student Aid Report (SAR) to the student. The Financial Aid Office at LCC must receive these results to award aid. LCC must be listed as a college choice on the FAFSA in order for LCC to receive the information electronically. The Title IV code to list LCC as a college of choice is 002278.

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

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

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

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

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

The LCC Foundation has scholarships available throughout the year. Please consult the Enrollment Services/Student Financial Aid Office or call the LCC Foundation Office at (517) 483-1955 for additional information.

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

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

RIGHTS AND RESPONSIBILITIES OF STUDENTS RECEIVING FINANCIAL AID

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

NEED AND FINANCIAL AID PACKAGE

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

EXPECTED FAMILY CONTRIBUTION

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

If a student is a self-supporting or independent student (as determined by the FAFSA), the College assumes that since a student is the primary beneficiary of education, the student has the 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, and savings and assets which may include the use of student loan funds.

SELECTION CRITERIA

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

FALSIFICATION OF INFORMATION

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

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

CREDIT HOUR LOAD

Fall and Spring Semester

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

Summer Session

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

SHORT COURSE ELIGIBILITY

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

1. Any remaining funds will be applied toward tuition and fees during registration. If sufficient funds are available after tuition and fees are paid, the student will receive a refund for any available balance.

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

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

FINANCIAL AID REFUNDS

Check Distribution

Checks are issued twice each semester. They will be mailed if financial aid awards exceed the amount of tuition and fees charged. Students use this money for books, supplies, transportation, and room and board. Book advance checks are printed during the first week of classes for part of the balance of grants, loans, or scholarships and;

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

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

COLLEGE WORK STUDY/STUDENT EMPLOYMENT

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

FINANCIAL AID TUITION REFUNDS/WITHDRAWALS

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

a. Unsubsidized FFEL Loans
b. Subsidized FFEL Loans
c. Unsubsidized (other than parent loans) Federal Direct Loans
d. Subsidized Federal Direct Loans
e. Federal Perkins Loans
REPAYMENT OF GRANTS

If a student withdraws from Lansing Community College or is withdrawn by the College because of nonattendance, a portion of any grants paid to the student may have to be repaid, and grants received for those courses may affect continuation of aid. Failure to repay could result in your account being referred to a collection agency and credit bureau.

SATISFACTORY ACADEMIC PROGRESS POLICY FOR FINANCIAL AID ELIGIBILITY

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

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

Satisfactory Academic Progress for Federal or State Loan Programs

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

Financial Aid Academic Probation

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

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

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

Appeal of Unsatisfactory Academic Progress

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

Reinstatement of Financial Aid Eligibility

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

Maximum Eligibility

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

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

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

APPEALS

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

RIGHTS TO INFORMATION

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

RENEWAL OF FINANCIAL ASSISTANCE

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

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

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

**VETERANS INFORMATION**

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

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

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

<table>
<thead>
<tr>
<th>LEVEL OF ATTENDANCE</th>
<th>REQUIRED CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time</td>
<td>Minimum of 12</td>
</tr>
<tr>
<td>Three-quarter time</td>
<td>9, 10, or 11</td>
</tr>
<tr>
<td>Half time</td>
<td>6, 7, or 8</td>
</tr>
<tr>
<td>One-quarter time</td>
<td>5 or less credits</td>
</tr>
</tbody>
</table>

Tuition and fees reimbursement only

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

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

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

**Satisfactory Progress for Veterans’ Benefits Eligibility**

In compliance with Veterans Administration statutory requirements of subparagraph 56, section 1775 of chapter 30, Título 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 (probability beyond two semesters of enrollment). Re-certification of eligibility for benefits will not be considered unless the veteran submits a Success Contract or until after the semester in which the student regains academic good standing (see Satisfactory Academic Progress Policy). Veterans must submit signed documentation that they have met with a Counselor by midterm as agreed to on the Success Contract.

**Certification Policy for Veterans Administration Educational Benefit Recipients**

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

**REGISTRATION INFORMATION**

**REGISTRATION PROCEDURES**

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

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

**ONLINE LEARNING**

The Online Learning option allows students to earn any one of ten (10) associate degrees utilizing the power and connectivity of the Internet. These programs present a new learning option for students independent, highly motivated learners, including those who live far from campus and off-campus locations. Students enrolled in LCC's Online Learning program will be guided by a dedicated staff of instructors whose courses have been specifically designed to deliver all the benefits of traditional learning along with technology enhancements that may not otherwise be available. There is a $10.00 course fee applied to all Online Learning sections beginning Summer 2001. See the current Course Schedule or visit the Electronic Campus/Online Learning at: [http://www.lcc.edu/online](http://www.lcc.edu/online) for more information about programs and registration.

**TUITION AND FEES**

**Residency**

1. **Eligibility for Paying Resident Tuition**

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

   1. The following applies to students under 18 years of age:
      a. The student's parents or legal guardians have resided within the LCC district for at least six months immediately prior to the first day of the semester.
      b. The student is married and has resided within the LCC district at least six months immediately prior to the first day of the semester.
      c. The student is unmarried and is recognized as "emancipated" (receives no financial support from parent or legal guardian) and has resided within the LCC district for at least six months immediately prior to the first day of the semester.
      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 for 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 admission and registration (Michigan House Bill No. 4166, 1955). Lansing Community College reserves the right to make the final decision on residency eligibility. New students must verify residency at the time of admission. Current students whose mail is returned to the College are required to provide proof of residency in person prior to future enrollments.

Residency is based on where a student has resided for the six months immediately prior to the first day of the semester of enrollment. Any one of the following documents is acceptable as proof of residency, providing that the six months prior to the first day of the semester for which residency is being sought is covered:

A. Current Michigan driver’s license or State identification card issued not less than six months prior to the first day of the semester in which residency is being sought.
B. Paid property tax receipts for the current year.
C. Current rental or lease agreement indicating six months residency immediately prior to the first day of the semester in which residency is sought. The student’s name and signature must be on the lease agreement.
D. Utility bills with the student’s name and address for each of the six months prior to the first day of the semester.

III. Residency Classification

A. Resident Students — Students who provide proof of residency within the LCC district for the six months immediately prior to the first day of the semester of enrollment are charged resident tuition.

B. Nonresident Students — Students who provide proof of residency within the State of Michigan, but outside the LCC district for the six months immediately prior to the first day of the semester of enrollment are charged nonresident tuition.

C. Out-of-State — Students who provide proof of residency in a state other than Michigan for the six months immediately prior to the first day of the semester of enrollment are charged out-of-state tuition.

D. International Students — Students who have been admitted to the United States in a temporary, nonresident status are charged international tuition. Individuals who have refugee, immigrant, or other status are not international students.

E. Foreign nationals who are enrolling in Virtual College courses and reside outside the United States or are admitted to the United States in a temporary, nonresident status will be charged international tuition. U.S. Nationals who are enrolling in Virtual College courses and are outside the United States will be charged domestic tuition.

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

IV. Residency Status for Military Personnel and Dependents

Residency is based on the location of the present domicile of the applicant with the six-month requirement waived if the applicant can provide any of the documents listed below. This waiver is extended to the dependents (spouse and children) of the person named on the Department of Defense 214 or 993 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 993, Change of Status Form, showing the Lansing station as the duty station;
C. Department of Defense 890, Change of Station Form, showing a change of duty station for the family of the household to an overseas assignment or as the result of an emergency mobilization.

V. Petitioning for a Change in Residency Status

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

VI. Nonresident Owners of In-District Property

Nonresident students or their guardians owning property in the LCC district will receive credit once a year for property taxes paid in support of the College by himself or herself or his or her guardian. The taxes must be in support of the current academic year and the credit cannot exceed the differential between resident and nonresident tuition rates for the current academic year. To obtain this credit, the student must provide Enrollment Services 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. Failure to pay could result in your account being referred to a collection agency and credit bureau. Current tuition and fees are as follows:

<table>
<thead>
<tr>
<th>Tuition per Credit Hour*</th>
<th>Resident Students</th>
<th>$ 54.00</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Nonresident Students</td>
<td>$ 56.00</td>
</tr>
<tr>
<td></td>
<td>Out-of-State Students</td>
<td>$118.00</td>
</tr>
<tr>
<td></td>
<td>International Students</td>
<td>$118.00</td>
</tr>
</tbody>
</table>

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

Refund Policy for Semester-Length Courses

Fall and Spring Semesters and Summer Session

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

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

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

VARIABLE DATE COURSES

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

UP TO AND INCLUDING THREE-DAY COURSES

100% Refund* Prior to start of course
Drop with no course shown* Prior to start of course

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

Change credit/audit status* Prior to end of course meeting

FOUR-DAY — LESS THAN EIGHT-WEEK COURSES

100% Refund* Prior to start of course
Drop with no course shown* Prior to start of course

Students with a valid reason for exception to this policy may fax, mail, or present their support documentation to Enrollment Services or the department offering the course.
AUDITING COURSES

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

The College allows students to change from credit to audit or from audit to
credit by the end of the sixth week for 16-week classes (and other equivalent
dates as specified for variable length courses). Students electing to change from
audit to credit are responsible for having course work up to date at the time the
change is made and must have instructor approval after the first week of the
semester. Changes from credit to audit through the end of the sixth week for 16-
week courses (and other equivalent dates as specified for variable length courses)
do not require instructor approval. In addition, students should be aware that exer-
cising this option may have an impact on their financial assistance or on student
employment at the College. Any student balance due created by a change in total
number of enrolled credits or change of course(s) to audit status must be paid by
the student. Charges in audit or credit status must be requested by the student
through the Enrollment Services/Registrar's Office.

WITHDRAWAL

I. Student-Initiated Withdrawal

A. If a student finds it necessary to withdraw from the College, he or she
should contact the Enrollment Services/Registrar's Office immediately and
complete a drop-add form.

B. If the withdrawal takes place within the established refund period for each
semester, a student withdrawing will receive a refund.

C. If a student withdraws from a semester-length class prior to the end of the
sixth week of the semester (or other equivalent dates as specified for vari-
able length courses), instructor approval is not needed; a final grade is not
issued, and the withdrawn student is not recorded on the academic record. A
copy of the student-initiated drop-add form is maintained in the Enrollment
Services/Registrar's Office.

D. A student may request to withdraw from a semester-length class after the
end of the sixth week of the semester (or other equivalent dates as specified
for variable length courses) only if he or she is completing the course
requirements at a passing level (1.0 or higher) at the time the W is
requested. Approval of the withdrawal is at the instructor's discretion. If the
instructor finds that the student was not able to apply for the W in a timely
fashion, the instructor may grant the student's request for a W if the student
was passing the course on the date of the event that caused the applica-
tion for withdrawal. A student may request to withdraw from a class up until
the last week of the class unless a different date is specified in the course
syllabus. The instructor's signature is required in order for the student to
receive a grade of W.

II. Administrative Withdrawal

The ultimate responsibility for withdrawal from a class rests with the student.
However, it may be in the best interest of the student and/or the College com-
munity that a student be withdrawn from a class or a group of classes. This process
is known as 'administrative withdrawal.'

An administrative withdrawal may be initiated by a classroom instructor in
accordance with written procedures established by each department. An admin-
istrative withdrawal may be based on the following: (1) student nonattendance/non-
participation; (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 attend or participate in the class, the instructor may
initiate administrative withdrawal through the Enrollment Services/
Registrar's Office.

B. When a student does not have the prerequisites for a particular course, the
classroom instructor consults the course and the instructor regarding the po-
tential of administrative withdrawal. The instructor has the right to initiate an
administrative withdrawal through the Enrollment Services/Registrar's Office.

C. When a student behaves in such a manner that interferes with the instruc-
tional process, the classroom instructor consults with the student regarding the
potential of administrative withdrawal and establishes guidelines in writing
for retaining enrollment in the class. If the student does not satisfactorily
meet the guidelines or if the student does not respond to an invitation to meet with the classroom instructor, the classroom instructor, with the co-recommendation of the appropriate department chairperson, may impose an administrative withdrawal. The classroom instructor, with the co-recommendation of the appropriate departmental chairperson, may also recommend that a member of the counseling staff meet with the instructor and the student to review the circumstances of the student's behavior and to work out a possible alternative.

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

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

III. Procedure for Resolving Health-Related Student Problems

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

A. Call the Department of Public Safety and the Office of the Dean of the Student and Academic Support Division if:

1. Emergency health services are required or
2. It appears that there has been or is likely to be a violation of the law.

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

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

D. If there appears to be a violation of the law or a College regulation, the Office of the Dean of Student and Academic Support (or designee) shall contact the counseling staff, and a member of the counseling staff will meet with the student and recommend:

1. Continued counseling if the problem is within the ability of the Counseling Department to handle.
2. Referral back to the Office of the Dean of Student and Academic Support when no health-related problem is evident or when it is determined that the Counseling Department can be of no further service.

3. Referral to other appropriate professional assistance if the problem is beyond the ability of the Counseling Department to handle. If the problem significantly compromises the rights or safety of other persons at the College, or if 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/she submits evidence from a licensed and appropriate health care professional stating that the student is able to function effectively with the stressors and demands of a College setting. The student may appeal the withdrawal decision to the Board of Appeals.

4. Whenever possible, the counseling staff, working with the student's physician and/or relatives, shall make a recommendation to the student as to his or her future course of action.

ACADEMIC INFORMATION

ACADEMIC DEFINITIONS

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

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

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

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

Credit Hour: A credit hour is an instructional unit carried out for the expressed purpose of fulfilling 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 50 instructional minutes.

Concurrent Course: A corequisite course is a course that must be taken concurrently with another course.

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

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

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

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

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

GRADING SYSTEM

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

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>COLLEGE STANDARD</th>
<th>NARRATIVE EQUIVALENT</th>
<th>ACHIEVEMENT OF OBJECTIVES*</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Excellent</td>
<td>100%</td>
<td>95% to 100%</td>
</tr>
<tr>
<td>3.5</td>
<td>Good</td>
<td>90% to 94%</td>
<td>75% to 94%</td>
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<tr>
<td>3.0</td>
<td>Good</td>
<td>85% to 89%</td>
<td>60% to 84%</td>
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<td>Acceptable</td>
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</tr>
<tr>
<td>0.0</td>
<td>Failure</td>
<td>0% to 49%</td>
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</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 audited a course (X), withdrawn from a course (W), or did not complete course work (F). Specific regulations regarding these alphabetical letters are as follows:

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

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

3. A "W" (withdrawal) indicates a withdrawal from a course with achievement in the course above the failure level at the time of withdrawal. If a request for withdrawal from a semester-length course is received by the Enrollment Services/Registrar's Office prior to the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses), no grade will be recorded on the student's academic record. For withdrawals after the sixth week of the semester (or other equivalent dates as specified for variable length courses), a W is given only if the student has done passing work (1.0 or higher). If the student has not done passing work, he or she will receive a 0.0.

**COMPUTING GRADE POINT AVERAGE**

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

<table>
<thead>
<tr>
<th>NUMERICAL GRADE</th>
<th>GPA POINTS</th>
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<tbody>
<tr>
<td>4.0</td>
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"W", "X", and "I" grades are not included in calculating grade point averages. Thus, a student who receives five credit hours of 4.0, five credit hours of 3.5, and five credit hours of 2.0 would have a total of 45 GPA points. To compute the grade point average (GPA), the number of GPA points is divided by GPA hours (credits) taken during the semester.

**PASS/FAIL GRADED (P-Z)**

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

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

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

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

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

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

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

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

**REPEATING A COURSE**

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

**REPEAT ENROLLMENT POLICY**

Lansing Community College has a proven commitment to student success. For that reason, the following policy has been enacted to help students who have been unable to succeed in a specific course.

When a student receives a grade of "C." or "W" for the same course reported on the transcript twice, and remains academically eligible to continue taking classes, the student may not enroll in the same course a third time without a permission form signed by an LCC Counselor, or a specially designated Advisor, as part of a plan to help the student be successful. (Distance students may arrange an electronic consultation.)

If the student fails or receives a "W" after the intervention, the student may not enroll again without another permission form signed by both the Counselor/Advisor and the Dean of the Student and Academic Support Division.

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

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

**GRADE REPORTS**

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

**GRADE CHANGES**

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

**ACADEMIC STANDING POLICY**

Students must maintain at least a 2.0 cumulative Grade Point Average (GPA) at Lansing Community College to remain in Good Standing, which indicates satisfactory academic progress. Students whose cumulative GPA falls below 2.00 will be placed on either "Warning" or "Probationary" standing which indicate unsatisfactory academic progress. While on Warning or Probationary standing, the student may have limits on registration for classes. In addition, students on Warning or Probationary standing may be required to meet with a counselor and sign a Success Contract prior to registering. Students can return to Good Standing by earning a cumulative GPA of 2.00 or higher. Continuing to earn a GPA below 2.00 may result in being academically dismissed from LCC.

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

**Summary of Academic Standing Policy**

- **Good Standing:** Cumulative Grade Point Average (GPA) 2.00 or above
- **Warning:** Cumulative GPA below 2.00; suggested that the student meet with a counselor
• Probation: Continued cumulative GPA below 2.00; registration limited to 12 or fewer credits for Fall and Spring Semesters and six or fewer for Summer Session, and student is required to meet with a counselor.

• Academic Recross: Continued cumulative GPA below 2.00; student not eligible to register and must sit out one semester or Summer Session. Upon return following the semester of recess, a student must meet with a counselor to plan his or her academic success and sign a Success Contract. Satisfactory completion of this plan as well as semester-by-semester subsequent plans will allow further enrollment until a satisfactory cumulative GPA places the student in good standing.

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

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

Presidents List: GPA over 3.60
Dean's List: GPA between 3.50 and 3.60

ACADEMIC AMNESTY

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

1. Five or more years must have elapsed since the last grade for which amnesty is requested.
2. The student must have earned twelve semester credit hours in courses numbered 100 or above at LCC and have a cumulative GPA of at least 2.0 since the last grade for which amnesty is requested.
3. Academic amnesty may be granted only once to any student and is irrevocable.
4. The Petition/Application for Academic Amnesty must be received by Enrollment Services/Registrar's Office by the 10th week of the semester for consideration and action by the end of the semester.

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

STUDENT RECORDS

STUDENT TRANSCRIPTS

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

Students may request that a copy of the official transcript be given or mailed to any party by submitting a request in writing to the Enrollment Services/Registrar's Office. Transcript requests are charged $7.00 for each copy, and a $5.00 fee is charged for each transcript. A held may be applied to the release of the transcript of any student or former student who has an indebtedness to the College.

RECORDS POLICY

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

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

1. Students and/or a parent of a student, if the student is a dependent, have the right to access, inspect, and review all educational records directly related to the student. Upon presentation of a picture identification and a written request from the student to the Enrollment Services/Registrar’s Office in Suite 2200 of the Gannon VocationalTechnical Center, access to all educational records shall be provided within a reasonable period of time (not to exceed 45 days from the date the request is submitted).

2. Educational records include all information maintained by the College that 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. Note that the College must permit access to that part of the record which pertains only to the inquiring student.
   e. Reports made by physicians, psychiatrists, or psychologists in connection with their treatment.
   f. Records of instructional, supervisory, administrative, and certain educational personnel who are in the direct possession of the originator.
   g. Records of the law enforcement unit of the College if compiled for law enforcement purposes.
   h. Records which relate exclusively to individuals in their capacity as College employees.

3. Directory information may be released at the discretion of College officials for any student who has not submitted a completed Request to Prevent Disclosure of Directory Information form to the Enrollment Services/Registrar's Office. The disclosure prevention form remains in effect until the student provides a written release to the Office of the Registrar. Directory information includes but is not limited to:
   a. Name of student
   b. Dates of attendance
   c. Enrollment status
   d. Awards, degrees, or certificates received
   e. Participation in officially recognized activities
   f. Sport, weight, and height of members of athletic teams
   g. Previous educational agency or institution attended


4. Lansing Community College prohibits the release of personally identifiable information other than directory information from educational records without the student's written consent. Exceptions to this statement are listed below:
   a. Academic and administrative officials, staff, and persons who have entered into a partnership or contract with Lansing Community College and whom the College has determined to have legitimate educational interest. An official has a legitimate educational interest if he or she is a professional employee, or if he or she has a professional relationship with the student.
   b. Other educational institutions in which the student is enrolled or intends to enroll.
   c. Individuals and organizations who provide financial aid or scholarships to the student.
   d. Authorized representatives of the Comptroller General of the United States, the Secretary of the Department of Health and Human Services, the Department of Veterans Administration, the Department of Education, and administrative heads of state and federal educational agencies authorized by law.
   e. Accrediting organizations to carry out their accrediting functions.
   f. Appropriate authorities in compliance with judicial orders and pursuant to being issued subpoenas. The College shall notify the student of any such orders or subpoenas unless the subpoena or order prohibits notification. The College shall comply with the subpoena ten (10) days after an attempt to notify the student of the request.
   g. Appropriate parties in an emergency if knowledge of the information is necessary to protect the health or safety of the student or other individuals.
   h. Parents who have established the student's status as a dependent according to Internal Revenue Code of 1954, Section 152.
1. An alleged victim of any crime of violence of the results of any disciplinary proceeding conducted by the College against the alleged perpetrator of the offense.
2. Military recruiters for the purpose of federal military recruiting as stated in Public Law 104-200, Section 509(2).

Lansing Community College will maintain a record of each disclosure of identifiable information from the external individuals or agencies listed above. The record will be maintained in the Enrollment Services/Registrar’s Office and will include the date, the names and addresses 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 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. 20220.

GUIDELINES AND PROCEDURES FOR THE EVALUATION OF INCOMING TRANSFER CREDITS

Only official transcripts will be evaluated for transfer credit. Lansing Community College will determine the credit value of each of the courses. The College will accept only official transcripts only incoming transcripts that have appropriate signatures and official college seals and that are mailed directly to the Lansing Community College Enrollment Services/Admissions Office from an issuing institution. Transcripts or copies of transcripts carried by individuals may be used for academic advising or counseling, but transfer credits will NOT be posted to the Lansing Community College academic record from transcripts that are not received directly from the issuing institution. It is the function of the Enrollment Services/Admissions Office of the College to verify the official status of all incoming transcripts prior to the evaluation and posting of transfer credit. All transcripts submitted to LCC for evaluation become the property of LCC. Students will receive official notification of transcript evaluation results upon completion of the process.

Course work, which is similar in nature, content, and level to that offered by Lansing Community College, will be accepted in transfer. Transfer credit will be accepted at full value in transfer if earned:
1. In a program, college, or university which offers programs that are comparable to programs offered by Lansing Community College, and the program or institution is either accredited or a candidate for accreditation by an accrediting association which is a member of Council for Higher Education Accreditation (CHEA), or
2. From institutions with professional accreditation but lacking regional accreditation, with attainment of a final grade of 2.0 or higher, providing an evaluation has been completed by appropriate faculty at Lansing Community College.

CREDITS EARNED AT ACCREDITED INSTITUTIONS

1. Evaluation of courses will be implemented on a consistent basis. Course work, which is similar in nature, content, and level to that offered by Lansing Community College, will be accepted in transfer. Changes in students’ curricula will not justify a change in how a course has been evaluated by the Enrollment Services/Registrar’s Office. For example, should a student bring in credit for ACC 210, that evaluation is permanent. If the students curriculun requires a different ACC course from that evaluated, if appropriate, a Course Substitution Waiver form will be filled out at the department level.
2. Freshman and sophomore level courses are reviewed for credit; provided the student has declared a curriculum (major or program of study). Higher-level credits may be 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 as general credit in a corresponding Lansing Community College program. In cases where Lansing Community College does not have a department or program similar to the courses on incoming transcripts, credit may be denied. Credits for courses graded Pass/Fail are not accepted in transfer.
3. General Education courses (college-level Writing/English, Science, Social Science, Humanities) are routinely accepted in transfer.
4. Technical Education courses may transfer, depending upon the program at Lansing Community College.
5. In some programs of study, credits earned in Math, Science, Technology, Health Careers, and/or other rapidly evolving fields may not be accepted in transfer due to age and/or content of courses and will be evaluated by appropriate program officials.
6. Internship study abroad experience, and internships may transfer depending upon the level and appropriateness of the learning experience.
7. Study abroad courses may transfer depending upon the international institution offering the courses, the relationship between the international institution and the domestic institution from which the student is transferring, and the level and appropriateness of the learning experience.
8. Remedial or developmental courses are not considered college level and do not transfer.
9. Credit equivalencies will be converted using the following guidelines:

   a. Quarter credits should be converted to semester credits (quarter credits x 2/3 = semester credits), without rounding up.
   b. A transfer course, which equates to an LCC course, and is lacking one credit or less, should be designated as the equivalent LCC course. Transfer students with fewer credits than those awarded for an LCC equivalent course may not have met all requirements of the equivalent course, and should meet with a program advisor.
   c. Credits only, not grades, are transferred. When the overall grade point average of a transferring student is at or above 2.0 on a 4.0 scale, the 1.0-1.5 or "D" grades may be accepted. Credit transferred in to specifically fulfill LCC General Education Core requirements and MACRAO requirements must be graded "C" (2.0) or higher. When the transferring overall grade point average is under 2.0 on a 4.0 scale, only courses graded 2.0 ("C") or higher will be accepted. With the exception of credits transferred in to fulfill LCC General Education Core requirements, the student may petition the departmental chairperson of his or her academic department to waive a degree or certificate course requirement(s) in which he or she has previously earned the 1.0-1.5 or "D". Waiver of a course requirement does not provide credit for a course. The department chair will notify the Enrollment Services/Registrar’s Office of waivers.
   d. 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 meet previous course work.
   e. A student may request a review of the evaluation if he or she feels that a course description differs from the way in which it was evaluated. The department chairperson, in conjunction with the Registrar, will review the evaluation. Any resulting change(s) to the evaluation may be verified through the Enrollment Services/Registrar’s Office.

CREDITS EARNED AT NON-ACCREDITED INSTITUTIONS

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

1. The Enrollment Services/Registrar’s Office will forward a transcript from a non-accredited institution to the departmental chairperson of the department in which the student is enrolled.
2. The departmental chairperson has the following four prerogatives in evaluating transcripts issued by non-accredited institutions:
   a. Credit may be granted by demonstration by the student of skills commensurate with the performance required for satisfactory completion of learning outcomes.
   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 par with existing courses at the College. It is the responsibility of the student to provide requested materials to enable proper evaluation.
   c. Credit may be granted upon demonstration of proficiency in a particular existing course by a comprehensive examination.
   d. Credit may not be granted.
3. The departmental chairperson will return the transcript to the Enrollment Services/Registrar’s Office and indicate in writing the credits granted and the course equivalency at Lansing Community College. The final transcript evaluation will have the signature of the appropriate divisional dean.
4. When two or more instructional departments are involved, the departmental chairperson of the department offering the student’s program will be
responsible for consulting with the additional departmental chairpersons. When two or more departments are involved, the written reply to the Enrollment Services/Registrar's Office will include the signatures of each respective departmental chairperson and the respective dean or their designee(s).

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

CREDITS EARNED IN FOREIGN INSTITUTIONS

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

- Educational Credential Evaluators, Inc., P.O. Box 92970, Milwaukee, WI 53202-0979; e-mail: eval@ece.org
- World Education Services, Inc., P.O. Box 745 Old Chelsea Station, New York, NY 10113-0745; e-mail: info@wes.org
- International Education Research Foundation, Inc. (medically-related credentials), P.O. Box 8649, Los Angeles, CA 90066; e-mail: info@ierf.org

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

Mini-grants in the amount of $70-$80 for each mini-grant completed by a professional evaluation service are available for international students who demonstrate critical financial need. Students must meet the following criteria in order to be eligible for a grant:

1. Must be enrolled as a student at Lansing Community College
2. Must be approved for federal financial aid
3. Must be recommended by an LCC counselor OR

The international student's circumstances have changed enough to warrant consideration for assistance with this fee as determined by the counselor responsible for international students, e.g., students who are currently receiving Special Student Relief because of economic crises in their countries; students whose circumstances have changed since their original financial documents were submitted; students who have experienced a drastic devaluation of currency in their home country; and students who receive permission from the U.S. INS for employment authorization due to severe economic hardship.

A Foreign Credit Evaluation Mini-Grant application will be completed by an LCC counselor and submitted to the Lansing Community College Foundation.

CREDITS EARNED AT MILITARY SCHOOLS

Military Schools - Credit may be granted for degree programs. Recommendations found in the Guide to the Evaluation of Educational Experience in the Armed Services, published by the American Council on Education, and available online at http://www.militaryguides.acenet.edu are forwarded to the appropriate program for evaluation. If the experience is determined to provide appropriate preparation, credit is granted. For course work completed through the Defense Language Institute, Foreign Language Center at the Presidio of Monterey in California, credit is routinely granted.

EXAMINATIONS AND AP COURSES

AP (Advanced Placement Program of the College Board) (http://apcentral.collegeboard.com) – Credit or waiver of courses may be granted for the successful completion of AP courses and examinations. Specific recommendations will be determined by the AP grades received. Official high school transcripts listing AP grades should be sent to the Lansing Community College Enrollment Services/Admissions Office.

CLEP (College Level Examination Program) (http://www.collegeboard.com/clep/) – Credit or waiver of courses may be granted for the successful completion of General Examinations and/or Subject Examinations. Specific recommendations will be determined by the scores received. CLEP transcripts should be forwarded directly to the Lansing Community College Enrollment Services/Admissions Office from the CLEP Transcript Service, P.O. Box 6600, Princeton, NJ 08541-6600. DSST (DANTES Subject Standardized Tests) (http://www.gobccollegecredit.com) – Credit or waiver of courses may be granted for the successful completion of DSST examinations. Specific recommendations will be determined by the DSST grades received.

OTHER EXPERIENCES (WORKSHOPS, WORK EXPERIENCES, SEMINARS, ETC.)

For credit to be granted for a non-collegiate course, workshop, or seminar, the student must demonstrate the quality of their learning achievement through measurable means, e.g., course final examination, comprehensive examination, the completion of "Credit for Previously Acquired Knowledge and Learning Experience" as outlined in the College catalog, approved state or national licensure or certification, or other means specified in a formal, articulated agreement. Contact the Enrollment Services/Registrar's Office for specific details.

CREDIT FOR APPROVED STATE OR NATIONAL LICENSURE OR CERTIFICATION

Lansing Community College recognizes that current licensure or certification represents learning for which credit may be granted. Therefore, the College assesses national and state licenses as part of its credentialing function. Any student who has applied to Lansing Community College may apply for license or certification credit evaluation. Contact the Enrollment Services/Registrar's Office, Gannon Vocational-Technical Building, (517) 433-1200 to determine which college department will perform the assessment.

NOTE: Lansing Community College’s decision to award credit for licensure or certification 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 licensure or certification may not be used for financial aid or veterans benefits eligibility. Some Lansing Community College courses are excluded from licensure or certification consideration.

Lansing Community College does not accept the transfer of credit for licensure or certification awarded at other institutions.

APPEAL PROCEDURE

Students who believe these Guidelines and Procedures have not been implemented accurately in the evaluation of their transfer credits may initiate an appeal with the Enrollment Services/Registrar's Office, Gannon Vocational-Technical Building, (517) 433-1200.

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

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

CREDIT FOR PREVIOUSLY ACQUIRED KNOWLEDGE AND LEARNING EXPERIENCE

Lansing Community College recognizes that learning outside of the classroom is valid. Therefore, the College assesses extra-institutional learning as part of its credentialing function. Any student who has applied to Lansing Community College may apply for experiential learning credit by obtaining an Experiential Learning Processing Form from the Enrollment Services/Registrar’s Office, Gannon Vocational-Technical Building, (517) 433-1200.

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

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

Application Procedures

Relevant aspects of personal and professional experiences gained through actual job-related activities and special training experiences may be applied to an academic program at Lansing Community College. Learning experiences must directly relate to a specific course or courses required within a Lansing Community College program (curriculum) or the LCC General Associate Degree. These experi-
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 credits is as follows:

1. The student picks up an application for credit by examination at the Enrollment Services/Registrar's Office.
2. The student completes the required information on the application and turns the application to the department for instructor and departmental chairperson signatures of approval.
3. After obtaining the required signatures, the student returns the signed application to the Registrar's Office for payment of tuition.
4. The student will complete an examination for each course in which he or she hopes to receive credit.
5. An examination will not be given by the instructor until the student presents the appropriate payment receipt. No more than one examination will be given for a single payment.
6. The examination, after being evaluated by the instructor, will be maintained on file in the departmental office.
7. The Enrollment Services/Registrar's Office will contact the department and request the grade which was earned upon completion of the examination.
8. A grade will be entered for each comprehensive examination given.
9. 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.

GRADUATION REQUIREMENTS, CERTIFICATES, AND DEGREES

INSTITUTIONAL REQUIREMENTS FOR CERTIFICATES OF ACHIEVEMENT AND CERTIFICATES OF COMPLETION

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

1. Complete a course of study approved by the College and consisting of a minimum of 30 semester credits for a certificate of achievement and lower than 50 semester credits for a certificate of completion with no more than 10 percent of these credits required on the pass/fail (IP/IN) grading system. [See the Degree and Certificate Programs section of this catalog]
2. Maintain a cumulative grade point average of 2.0 or above in all courses taken at the college.
3. Earn toward the curriculum at least one-third of the semester credits for the certificate in attendance at Lansing Community College. Credits earned through comprehensive exams will not be counted toward this requirement.
4. File an application for graduation with the Enrollment Services/Registrar's Office at least one semester preceding the semester of graduation.
5. Satisfy all general and specific requirements at Lansing Community College.

NOTE: Students seeking a certificate of achievement or certificate of completion may not follow curricular guidelines which produce 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 those credits acquired on the pass/fail (IP/IN) grading system. [See the Degree and Certificate Programs section of this catalog]
2. Maintain a cumulative grade point average of 2.0 or above.
3. Earn toward the curriculum at least 30 semester credits for the Associate in attendance at Lansing Community College. Credits earned through comprehensive exams will not be counted toward this requirement.
4. Satisfy the College's General Education Core Area Requirements, including demonstrated competency in mathematics.
5. Satisfy all general and specific requirements of Lansing Community College.
6. File an application for graduation with the Enrollment Services/Registrar's Office one semester preceding the semester of graduation.

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

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

General requirements for associate degrees offered by Lansing Community College are presented below. (For specific degree requirements, see the Degree and Certificate Program 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 16 LCC General Education Core credits, additional general education MACRAO 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 16 LCC General Education Core credits, additional general education MACRAO 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 in their current careers. This degree includes a concentration of courses in fields such as the visual arts or the performing arts. Requirements: 60–72 credits, including a minimum of 16 LCC General Education Core credits, specific career program requirements, and institutional associate degree requirements.

Associate in Applied Science: This degree is designed for students who seek education and the acquisition of skills needed to enter the job market or to advance in their current careers. This degree includes a concentration of courses in fields such as health care, manufacturing, and construction. Requirements: 60–72 credits, including a minimum of 16 LCC General Education Core credits, 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 16 LCC General Education Core credits, 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, including at least 60 credits and including the LCC General Education Core requirements. Students must complete a minimum of 12 credits in an area of study of their own choosing or they must complete the credits listed on a transfer guide (see Transfer Information in the catalog for a list of institutions for which transfer guides are available). Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

LCC GENERAL EDUCATION REQUIREMENTS

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

1. Communication
   - Define and explain the nature of the communication process.
   - Use language and nonverbal behavior to express ideas and feelings clearly and responsability.
   - Participate constructively in group/team discussions/activities.
   - Research, prepare, and present oral and/or visual information effectively.
   - Listen/interpret, with both literal and critical comprehension, in a variety of communication situations.

2. Global Perspectives and Diversity
   - Describe and analyze the ways in which societies and/or world civilizations establish socio-cultural order and the effects of these on individuals and the societies and/or world civilizations.
   - Describe and analyze how different societies and/or world civilizations have searched for truth, justice, and an understanding of what it means to be human.
   - Describe and analyze how major ideologies within societies, and/or world civilizations have resulted in peaceful and/or violent solutions to conflicts.
   - Describe and analyze how major ideas, issues, values, and institutions in societies and/or world civilizations have shaped cultures and the effects these have on individuals.
   - Describe, analyze, and examine the impact of the inclusion and/or exclusion of diverse perspectives of gender and ethnicity by societies and/or world civilizations.

3. Mathematics
   - Use the strategies of arithmetic, geometry, and algebra to solve problems and effectively communicate the solutions in a variety of disciplines.
   - Use, interpret and produce one or more representations of a function, including graphs in one or more variables.

4. Science
   - Discuss and summarize basic knowledge of the nature, scope, purposes, and limitations of science and technology.
   - Explain and apply the fundamental concepts of one of the sciences.
   - Gather, analyze, interpret, and draw conclusions from empirical data.
   - Use scientific knowledge and methods as tools to make decisions about contemporary issues involving science and technology.

5. Writing
   - Use reading, writing, and critical thinking skills to analyze, synthesize, and evaluate abstract concepts and concrete information.
   - Use the stages of the writing process effectively.
   - Properly locate, incorporate, and attribute sources of information.
   - Produce effective writings that are targeted to various academic, community, and/or professional audiences.
   - Conform to conventions of grammar, punctuation, and spelling.

HOW STUDENTS CAN SATISFY LCC GENERAL EDUCATION CORE REQUIREMENTS

All students must fulfill LCC General Education Core requirements in order to be awarded an associate degree. The ways in which students can satisfy these requirements are presented below. Because these may be revised each academic year, students should consult an academic advisor or the most recent catalog information 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 colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

1. Achieve a grade of 2.0 or higher in an approved Core course (credits in parentheses):
a. Communication
- ARTS 102 Design & Communication (3)
- SIGN 160 Orientation to Deafness (3)
- SPCH 110 Oral Communication in the Workplace (3)
- SPCH 120 Dynamics of Communication (3)
- SPCH 130 Fundamentals of Public Speaking (3)

b. Global Perspectives and Diversity
- ECON 260 Comparative Economic Systems (3)
- ENGL 211 World Literature I (4)
- ENGL 212 World Literature II (4)
- HUMS 160 Mythology (4)
- HUMS 211 History of Art I (4)
- HUMS 212 History of Art II (4)
- HUMS 213 World Civilizations I (4)
- HUMS 214 World Civilization II (4)
- MGMT 234 Diversity in the Workplace (3)
- MUSC 240 World Music History I (4)
- MUSC 241 World Music History II (4)
- OADM 275 Cultural Differences in Business (3)
- PHIL 211 World Philosophies I (4)
- PHIL 212 World Philosophies II (4)
- POLS 260 Comparative Political Systems (3)
- SOCL210 Introduction to Sociology (4)
- SOCL 260 Race and Ethnicity (3)

Mathematics
- MATH 112 Intermediate Algebra (4)
- MATH 115 Technical Math II (4)
- MATH 117 Math for Business (4)
- MATH 118 The Art of Geometry (3)
- MATH 119 Investigations with Math (3)

Science
- ASTR 201 Introductory Astronomy (4)
- BIOL 120 Environmental Science (4)
- BIOL 127 Cell Biology (4)
- BIOL 145 Intro Anatomy and Physiology (4)
- BIOL 262 Human Physiology (4)
- CHEM 135 Chemistry In Society (4)
- CHEM 151/161 General Chemistry Lecture I and Laboratory I (4)
- GEOL 230 Geology (4)
- IGSI 121 Integrated Science for Education I (4)
- IGSI 131 Integrated Science - Physical (4)
- PHYS 120 The Art of Physics (4)
- PHY5 251 Physics I: Mechanics (4)

Writing
- ENGL 122 Writing about Literature and Ideals (4)
- IGSI 132 Honors Writing about Literature and Ideals (4)
- WRIT 121 Composition I (4)
- WRIT 122 Composition II (4)
- WRIT 104 Technical Writing (3)
- WRIT 217 Business Writing (3)
- WRIT 131 Honors Composition I (4)
- WRIT 132 Honors Composition II (4)

In mathematics, achieve a grade of 2.0 or higher in any non-Core mathematics course, at MATH 121 or above.
5. Present evidence of an earned associate or baccalaureate degree from an accredited college or university.
6. If no degree has been earned, transfer in comparable course credit for an approved course from an accredited institution. General credit does not apply unless documentation for the Core area learning outcomes is provided and approved by the appropriate instructional Office and Department.
7. Establish appropriate course credit through the Advanced Placement Examination (AP), College Level Examination Program (CLEP), DANTES Subject Standardized Tests (DSST), and others as recognized by LCC.
8. Establish credit for an approved course through the Experimental Learning Process. See "Credit for Previously Acquired Knowledge and Learning Experience"

The following do NOT satisfy General Education Core requirements:
- LCC placement test scores
- A waiver of any course that is also a Core course
- Completion of higher-level courses that are not approved Core courses (see mathematics information in #4 above for mathematics exception)

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

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

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

SEMESTER TRANSITION PROGRAM COMPLETION INFORMATION

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

Students who started degree or certificate programs at LCC prior to Fall Semester 1995 and are continuing their studies on the semester system are considered transition students. In order to complete college requirements or curriculum requirements for their declared major, transition students should meet with an academic advisor to complete a Curriculum Completion Plan.

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

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

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

REGULATION FOR THE GRANTING OF ADDITIONAL
ASSOCIATE DEGREES

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

1. For each additional associate degree, a minimum of 10 semester credit hours must be completed at LCC. The division in which the degree is sought, non-remedial, 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 must be satisfied.
4. No additional degree will be granted in the same program or curriculum in which the first degree was earned.
5. Exceptions to the above should be appealed to the Academic Affairs Office.

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

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

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

ASSURANCE OF QUALITY

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

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

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

A Lansing Community College graduate may be permitted to take a specified course or courses, when next offered, with no tuition or fee charge by submitting his or her request to the Enrollment Services/Registrar's Office 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 promotes the students' maximum freedom and necessary order. In order to achieve this goal, the College has established procedures for the conduct of activities by its students. The College has also established regulations for the purpose of regulating the behavior of its students. These regulations are designed to maintain order and to protect the rights of students to learn in an environment free from disorder, interference, or other activities that are criminal and/or civil action where warranted.

GENERAL RULES AND REGULATIONS

Assaults

Assault and/or battery, and threatening, attempting, or using physical force or intimidation against (a) any person on the Campus premises or at a College-sponsored function (athletic events, activities, etc.), or (b) any College student or employee in connection with the performance of his or her College duties or activities, as defined in this section, with force and violence, or to do corporal harm to another with apparent or actual means of carrying out the attempt. Battery is an injury that results from any person's battery. Battery is an injury, regardless of intent, actually done to a person by another in an angry, resentful, rude, or violent manner.

Assembly

No person or persons shall assemble in a manner that obstructs the free movement of persons about the campus or the free and normal flow of College buildings and facilities or prevents or obstructs the normal operation 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 other register-related reasons, relieves the student of the responsibility for completing all work in the course or the satisfaction of the instructor in charge. When a student receives a diagnosis of nonattendance, it is the student's responsibility to contact the instructor.

When a student cannot attend class due to illness or other extraordinary reasons, the class instructor should be notified.

Cheating

Each student is expected to be honest in his or her work. Cheating is defined as the use of unauthorized materials or sources, including but not limited to the use of any unauthorized assistance in falsifying quizzes, tests, or examinations; the use of unauthorized sources such as notes, books, text, a calculator, or a computer; and wrongfully obtaining material relating to a test. No unauthorized materials shall be distributed to other members of the College faculty or staff. Any interaction between students in a testing situation may be interpreted as cheating. Accurate honesty is expected of all students at all times; first, not to cheat, and second, not to enable others to cheat.

Computer Resources – Acceptable Use

The LCC Acceptable Use Policy describes the policies and guidelines for the use of the College's computer resources. Use of College-related computer resources is a privilege extended by the College to students, staff, faculty and other authorized users as a tool to promote the mission of the College. All users agree to be bound by the terms and conditions of the LCC Acceptable Use Policy at the time they complete an account application form. Copies of the LCC Acceptable Use Policy are available at the Library Circulation Desk and may also be accessed on the World Wide Web. The URL is http://www.lcc.edu/accp
Conduct – Interim Due Process Suspension

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

Disclosure of Health Concerns

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

Dress

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

Drug and Alcohol Regulations

In recognition of (1) the serious health risks associated with the illegal use of controlled substances and (2) the abuse of alcohol, and in conformity with the Board of Trustees policies 4416 and 7820, as well as the Drug-Free Schools and Communities Act Amendments of 1986 (20 U.S.C. 3171, et seq.), the following regulations are effective immediately:

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

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

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

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

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

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

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

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

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

10. In the spirit of providing a safe, healthy and drug-free environment, the College will:

a. Continue to offer educational programs that support a drug-free campus and workplace as a normative social value;

b. Continue to offer opportunities for substance abuse counseling accessible by students and College employees;

c. Continue to make referrals to appropriate counseling professionals and/or agencies within the community to help students and employees who may benefit from such counseling;

d. Incorporate in classes throughout the curriculum, where appropriate, references and class-related assignments related to the medical, legal, social, and wellness issues inherent in a drug-free campus and workplace;

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

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

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

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

Examinations

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

Field Trips

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

Fighting

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

Financial Responsibility

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

Games and Recreational Activities

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

Guest Speakers

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

Identification Cards

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

Laws

Students shall obey the laws enacted by federal, state, and local governments. It is appropriate that the student be aware of Act 28 of the Public Acts of 1972:

Sec. 1. A person is guilty of a misdemeanor, punishable by a fine of not more than $500.00, or by incarceration in the county jail for not more than 90 days, or both:
1. When the chief administrative officer of a publicly owned and operated institution of higher education, or his or her designee, notifies the person that he or she is such an officer or designee, and that the person is in violation of the properly promulgated rules of the institution; and
2. When the person is in fact in violation of such rules; and
3. When, thereafter, such officer or designee directs the person to vacate the premises, building, or other structure of the institution; and
4. When the person thereafter willfully remains in or on such premises, building, or other structure; and
5. When, in so remaining, in a manner or manner thereon, the person constitutes:
   a. A clear and substantial risk of physical harm or injury to other persons or of damage to or destruction of the property of the institution; or
   b. An unreasonable prevention or disruption of the customary and lawful functions of the institution, by occupying space necessary therefore or by use of force or by threat of force.

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

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

Obstructing and Jostling

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

Organizations

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

Pets

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

Plagiarism

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

Lansing Community College is a "Smoke-Free" and "Tobacco-Free" zone. No smoking or the use of a tobacco product is permissible on Lansing Community College property, including in any building, facility, or structure and on any real estate that is owned or leased. This policy applies to all persons, including all students, staff, and visitors.

Student Evaluation of Instructional Quality

Because students expect quality in their learning experiences, Lansing Community College provides opportunities for students to participate in the evaluation and improvement of instruction. These opportunities include the following:
1. Periodically completing Student Evaluation Forms at the conclusion of courses. The forms are distributed by a person other than the instructor, and the instructor is not present at the time the students complete the forms.
2. Serving on various councils, boards, and committees of the College in order to provide input and student perspective in the development and evaluation of both instructional and support services programs. Those councils, boards, and committees are located in the various divisions of the College. Those students who have interest in serving on or contacting members of these bodies may contact the Student Life Office or the office of the dean in the appropriate divisions.

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

Vandalism/Theft

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

Video Cassette

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

Weapons and Explosives

The possession of weapons, or explosives on the property of Lansing Community College is prohibited. The definition of a weapon includes but is not limited to a pistol or other firearm of any kind, rifle, shotgun, silencer, or knife having a blade over 3 inches in length, or any other dangerous or deadly weapon or instrument. "College Property" covered by this policy includes, without limitation, all College owned or leased buildings and surrounding areas such as sidewalks, driveways, and parking lots under the College's ownership or control. College vehicles are covered by this policy at all times regardless of whether they are on College property.

CRIMINAL AND/OR CIVIL ACTIONS

When the actions or conduct of a student violate the policies 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.
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 within ten (10) calendar days of receiving written notification (excluding Saturday and Sunday). A delay may be placed on the student's record which will result in the student's enrollment being delayed.
- If a decision is made to prepare formal charges, the student shall be notified by an appropriate College official that he or she is being accused of violating a regulation and that he or she may elect to do one of the following:
  a. The student may admit the alleged violation and request, in writing, that the administrative officer take whatever action seems necessary.
  b. The student may admit the alleged violation and request a hearing before the Judicial Board regarding the discipline imposed.
  c. The student may deny the alleged violation, in which case the administrative officer shall refer him or her to the Judicial Board.

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

- The Director of Student Affairs
- The President (or his or her designee)

Examples of disciplinary action include the following:
- Reprimand
- Probation
- Restrictions on activities or privileges
- Requirements of restitution
- Denial or revocation of a College honor or degree
- Suspension
- Dismissal
- Permanent dismissal

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

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

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

- The Dean of the division involved (or his or her designee)
- The Board of the College
- The President (or his or her designee)

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

3. Student Appeal of Administrative Withdrawal from Classes

For Nonattendance, Lack of Course Prerequisites, or Inappropriate Classroom Behavior

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

- The Dean of the division involved (or his or her designee)
- The Judicial Board of the College
- The President (or his or her designee)

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

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

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

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

c. The Judicial Board of the College

d. The President (or his/her designee)

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

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

Student Complaints

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

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

b. The Judicial Board of the College

c. The President (or his/her designee)

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

Judicial Board

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

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

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

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

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

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

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

3. The student shall be entitled to appear in person and present his or her defense to the Judicial Board and may call witnesses on his or her behalf.

   The student may waive the right to appear before the Judicial Board. Should he or she elect not to appear, the student shall be considered to have waived the right to appeal, and the decision at the prior level stands.

4. The student shall be entitled to be accompanied by a person of his or her choice. If this person is in the form of legal counsel, the student must notify the Office of the Director of Student Services at least 30 (thirty) days prior to the scheduled hearing date.

5. The student has the right to be assisted by any advisor he or she chooses, at his or her own expense. The advisor may be an attorney. The student is responsible for presenting his or her own case and, therefore, advisors are not permitted to speak or to participate directly in any hearing before a Judicial Board.

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

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

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

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

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

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

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

Membership of the Judicial Board

The Judicial Board will consist of the following members:

1. The Director of Student Judicial Affairs or his or her designee; (NOTE: This member will serve as chairperson. However, when the Judicial Board is hearing an appeal based on a disciplinary decision of the Office of the Director of Student Judicial Affairs, the Director of Student Judicial Affairs will relinquish the chair, and a temporary chairperson will be appointed.)

2. One College administrator appointed by the Director of Student Judicial Affairs

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 the absence of any faculty member.

5. In the event two or more divisions are involved, one faculty representative from each division and an equal number of student representatives will be in attendance.

Regulation Revisions and Additions

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

EQUAL OPPORTUNITY AND NONDISCRIMINATION POLICY STATEMENT

I. Purpose

Lansing Community College is committed to a policy of providing equal employment opportunity and equal education for all persons regardless of race, color, sex, age, religion, national origin, creed, ancestry, familial status, marital status, height, weight, sexual orientation, disability or veteran's status or other status as protected by law.

Equal employment opportunity is a legal, social, and economic responsibility of the college and is provided in accordance with applicable federal and state laws and Lansing Community College policy. The college policy and practice at all levels assures the active and positive implementation of federal and state equal employment opportunity laws, executive orders, rules and regulations and College equal employment opportunity policies and guidelines.

The college prohibits retaliation or reprisals against any individual because he/she has filed a complaint or report, participated in an investigation, or otherwise opposed unlawful discrimination.

II. Scope

This nondiscrimination policy applies to admissions, employment, access to, and treatment in the college programs and activities. This policy applies to all persons employed by LCC, employed as a student, seeking admission to the college and/or requesting employment at or having contracts with the College.
III. General

The College is committed to and reaffirms support of equal opportunity in employment, education and non-discrimination in employment and academic policies, practices and procedures and will examine periodically all employment and academic policies for discrimination on the basis of race, color, religion, sex, national origin, creed, ancestry, familial status, age or disability, marital status, height, weight, sexual orientation, disability or veterans status or other protected status and take remedial action to correct such discrimination if it is found to exist.

The College values diversity and seeks talented students, faculty and staff from diverse backgrounds. The College does not discriminate in the administration of educational policies, programs or activities; admissions policies; scholarship and loan awards; athletic, or other college administered programs or employment.

IV. Responsibility

The College's Director of Equal Opportunity and Diversity Programs (517) 483-5232 is responsible for preparing procedures to implement this policy.

Failure to follow this policy may result in disciplinary action up to and including termination or expulsion.

HARASSMENT PREVENTION

I. Purpose

Lansing Community College is an Equal Opportunity Employer and does not condone unlawful discrimination or related harassment on the basis of race, color, sex, age, religion, national origin, creed, ancestry, familial status, disability, marital status, height, weight, sexual orientation, or veteran's status in any employment or educational opportunity. Such harassment is unlawful and expressly prohibited, and the College will make all reasonable efforts to prevent it.

II. Scope

This policy applies to all persons who are employed at the College as well as all students.

III. General

General discriminatory harassment is any conduct which, has the purpose or effect of unreasonably interfering with an individual’s work or education performance, or of creating an intimidating, hostile, or offensive environment for work or learning.

Sexual harassment has been more specifically defined by state and federal law, and regulations to generally mean unwelcome attention of a sexual nature from someone in the workplace or classroom that substantially interferes with work or academic performance. It may include, but is not limited to, sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when:

A. Submission or rejection of such conduct is made either explicitly or implicitly a term or condition of an individual’s employment, academic standing or status in a course, participation in a program or activity or other term or condition of employment or education;

B. Submission or rejection of such conduct is used as the basis for evaluating or impacting academic or employment conditions affecting a person;

C. Such conduct has the purpose or effect of unreasonably interfering with an individual’s work or education performance, or of creating an intimidating, hostile, or offensive environment for work or learning.

Examples of Harassment

Prohibited or unlawful harassment may take many forms. The following types of conduct are given as examples of harassment:

- Physical assault;
- Direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, graduation, or letters of recommendation;
- Direct unwelcome propositions of a sexual nature;
- Unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature;
- A pattern of conduct that is unreasonably interfering with an individual’s work or education performance, or of creating an intimidating, hostile, or offensive environment for work or learning.

Examples of Harassment

Prohibited or unlawful harassment may take many forms. The following types of conduct are given as examples of harassment:

- Physical assault;
- Direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, graduation, or letters of recommendation;
- Direct unwelcome propositions of a sexual nature;
- Unwelcome sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature;
- A pattern of conduct that is unreasonably interfering with an individual’s work or education performance, or of creating an intimidating, hostile, or offensive environment for work or learning.

American Government

AMERICANS WITH DISABILITY ACT, REASONABLE ACCOMMODATIONS AND SECTION 504 OF THE REHABILITATION ACT

I. Purpose

Lansing Community College is committed to providing and maintaining a barrier-free environment so that individuals with disabilities can fully access employment, programs, services and all activities of the college.

The college prohibits retaliation or reprisals against any individual because she/he has filed a complaint or report, participated in an investigation, or otherwise opposed unlawful discrimination.
II. Scope

This policy applies to all persons seeking reasonable accommodations from the college.

III. General

A. Students who are seeking classroom and academic accommodations should be directed to the Office of Disability Support Services (ODSS) Staff. The ODSS staff also serves as a resource for answering questions that LCC faculty and staff have when working with students with disabilities. ODSS is located in the Counseling Services Department, 2200 GVT and can be contacted by calling 517-483-1931. Students alleging discrimination based on a disability and/or failure to accommodate a disability should be directed to the Director of Equal Opportunity and Diversity Programs (Director of EODP).

B. Faculty and staff at Lansing Community College shall follow these three steps to request an accommodation:

1. The faculty and staff must self-identify themselves to the Director of EODP as a person with a disability.
2. The faculty and staff should make a written request to the Director of EODP for an accommodation, and
3. The faculty and staff must provide appropriate documentation of his or her disability and the need for an accommodation if so requested by the College.

Nothing in this document shall be construed to waive the College’s right to contest whether an employee or applicant is disabled or entitled to an accommodation.

Employees may self-identify as a person with a disability. Self-identification as a person with a disability alone is not sufficient to obtain an accommodation. Rather, the appropriate procedures must be followed to request and, if appropriate, obtain an accommodation.

C. Requests For Accommodation

A person with a disability may or may not need an accommodation. If a faculty or staff member believes that he/she needs an accommodation, he/she may request an accommodation by completing a Faculty/Staff Request for Accommodation form (Attachment A). (Document A and B may be obtained in the Office of Human Resources or the Office of EODP).

D. Medical Documentation

At any time during the accommodation request process, the College may ask the faculty or staff member for documentation (or additional documentation) of the disability and/or of the need for an accommodation. The faculty or staff will be required to provide that documentation.

E. Confidentiality

Medical documentation, as well as Faculty/Staff Request for Accommodation forms, will be maintained in a separate, confidential file apart from the main personnel file(s). Such documentation will be kept confidential, except as necessary to administer the accommodation process. Accordingly, medical documentation will be shared only with those individuals involved in the accommodation process, on an as needed basis, except as otherwise authorized by law.

F. Supervisor

When a faculty or staff member approaches his/her supervisor with a request for accommodation, the supervisor should discuss the need for accommodation with the employee. In addition to discussing the specific accommodation requested by the employee, the supervisor should discuss other possible accommodations and assess the effectiveness each would have in allowing the employee to perform the essential functions of the position.

The faculty or staff and the supervisor should discuss the following issues:

1. The essential job functions;
2. The faculty or staff’s ability to accomplish essential job functions with or without a reasonable accommodation; and
3. If an accommodation is needed, possible types of reasonable accommodation.

The supervisor should not request information regarding:

1. How the employee became a person with a disability;
2. Disabilities for which the employee is not seeking accommodation, or
3. Information, which is unrelated to whether, the person has a disability or what accommodation is needed.

The supervisor should make sure the employee has completed the appropriate request and accommodation forms. These forms should be forwarded to the Office of Equal Opportunity and Diversity Programs. The Director of EODP will review the request with the employee, supervisor, and Human Resources Representative. What constitutes a reasonable accommodation will vary depending on the circumstances of each case. In evaluating alternatives for accommodation, the preferences of the employee will be considered, but the ultimate decision regarding what type of accommodation, if any, will be provided is made by the College.

G. Office Of Equal Opportunity And Diversity Programs

The Director of Equal Opportunity and Diversity Programs maintains records of accommodations made for persons with a disability. The Director is available for consultations with faculty, staff or supervisors who are making assessments of accommodation requests. In cases where a requested accommodation involves action or expenses beyond the supervisory authority or in cases in which the faculty, staff and supervisor cannot agree on an accommodation, the College may do the following:

1. Identify alternative accommodations;
2. Gather necessary medical documentation;
3. Where appropriate, gather cost or other technical impact information from resources including:
   • The department and/or employee;
   • Physical Plant Office;
   • The Human Resources Office;
   • The EEOC, Department of Justice, or
   • Rehabilitation agencies;
4. Evaluate whether any accommodation is needed and, if it is, whether an accommodation is reasonable and should be made (this evaluation may include preparing cost estimates);
5. Recommend a reasonable accommodation, if appropriate;
6. Discuss the recommendation with the department/unit;
7. Obtain appropriate funding for the accepted accommodation, if needed; and/or
8. Follow up on approved requests.

H. Appeals

If an employee disagrees with the department’s accommodation determination, the employee may appeal the determination to the ADA Coordinator (who serves as the Director of EODP) in the Office of EODP.

I. Retaliation

Retaliation against an employee or applicant who requests an accommodation is prohibited. Individuals who feel that they have been retaliated against may contact the ADA Coordinator in the Office of EODP.

J. Responsibility

The Office of Human Resources works with the Department of Human Resources to facilitate placement of employees with work restrictions and/or in rehabilitation situations. Such placements may exceed the College’s legal duties under the ADR, the WPCA and/or the Rehabilitation Act. The nature of the required work restrictions may be shared with employing departments so that appropriate discussions about placement can take place. The College does not guarantee such placements or does it waive its right to limit its responsibility to accommodate a person with a disability to the duties imposed by the applicable state and federal statutes.

The College’s Director of the Office of Equal Opportunity and Diversity Programs (517-483-5320) serves as the ADA Coordinator. The Director is responsible for preparing procedures to implement this policy.

Failure to follow this policy may result in disciplinary action up to and including termination or expulsion.

STUDENT LIFE PROCEDURES

POSTER REGULATIONS FOR STUDENTS AND STUDENT ORGANIZATIONS

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

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

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

General Poster Regulations
1. Within any and all buildings, placement of all signs and posters is restricted to approved bulletin boards.
2. Each poster must identify the sponsoring organization, department, or individual (no abbreviations). Each poster must display a telephone number or an office location where more complete information can be obtained.
3. Each poster is required to have the lower left-hand corner, its posting date (month, day, and year) and, in the lower right-hand corner, its date (month, day, and year) to be removed. Each poster should be up for a reasonable length of time depending upon the activity.
4. Designated bulletin boards are available in each building for the posting of student and staff personal notices. All student and staff personal notices will be confined to these designated bulletin boards.
5. No poster shall 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. Unauthorized individuals shall remove no posters prior to the take-down date.
8. Lansing Community College respects the constitutional rights of freedom of expression. There are, however, responsibilities, which are attendant to the exercising of these constitutional rights. The following statement is made to provide an operational balance between the rights and responsibilities of the freedom of expression regarding the contents of posters. The content of posters shall avoid the liabilities of libel, obscenity; invasion of privacy; and incitement of disorder, violence, and disruption of the normal operation of the College.
9. Students and student organizations wanting to post posters must gain approval in the Office of Student Life for compliance with general regulations.
10. College staff and faculty must gain approval in their departmental office or from the office of their administrative supervisor.
11. Student and College staff personal notices placed in designated bulletin boards within the College buildings do not need approval. Examples of personal notices are selling used books, sharing a ride, sharing an apartment, and selling personal articles. Profit-making commercial notices are not considered personal and will be removed.

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

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

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

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

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

The following statements are designed to facilitate student distribution of literature within the College facilities, while providing students and College personnel and properly reasonable protection from commercial exploitation and legal actions. Court rulings have determined that College buildings, while considered a public trust, are not considered public property subject to unregulated use by any and all individuals. The procedural regulations below are designed to facilitate the legislated instructional mission of the College to serve the needs of the College community. The following procedural regulations shall be followed:
1. The distribution of literature within College buildings by students shall be limited to student literature tables made available for such distribution. Student literature tables will be made available in the following areas within the College buildings:
   a. In the entry lobby of the Gannon Vocational Technical Center.
   b. In the second floor lobby of the Gannon Vocational Technical Center.
   c. In the second floor lobby area of the Old Central Building.
   At least two single tables will be available in each of these areas. The maximum number of tables made available in any area will be determined in a reasonable manner based on the use of the area and regulations regarding the safety and welfare of the students.
2. Only registered students and College-recognized student clubs and organizations shall have access to the student literature tables. Non-students who wish to use college facilities must gain permission by following procedures established for this purpose through the Student Life Office.
3. The student literature tables will be available Mondays through Thursdays from 8 A.M. to 10 P.M. and Fridays 8 A.M. to 5 P.M. during the days of regularly scheduled semester.
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 more than one table or more than one location. If during the use of multiple tables or locations, additional students or recognized student groups request the use of a table or location and additional tables or locations are not available, the multiple user or users will be required to give up the multiple use of tables and locations to provide for the new request.

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

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

7. The student literature table will be staffed at all times by the individual student or members of the recognized student club or organization registered for the use of the tables while the distribution of materials is taking place. The registered student or recognized club or organization will have the responsibility to ensure that the distribution process is orderly at all times and that the general area surrounding the student literature tables is not littered.

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

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

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

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

Literature Table Use Request Flow Chart

<table>
<thead>
<tr>
<th>INDIVIDUAL STUDENT</th>
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</thead>
<tbody>
<tr>
<td>1. Register for reservation for use of table.</td>
</tr>
<tr>
<td>2. Have Director of Student Life review copy of literature.</td>
</tr>
<tr>
<td>3. Place copies of literature on file in Student Life Office.</td>
</tr>
<tr>
<td>4. Have a copy of registration form at table while distributing literature.</td>
</tr>
<tr>
<td>5. Have table staffed at all times by individual student or student organization member.</td>
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</tbody>
</table>

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<thead>
<tr>
<th>STUDENT ORGANIZATION</th>
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STUDENT LIFE OFFICE

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<tr>
<th>STUDENT ORGANIZATION DENIED USE</th>
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<th>DIRECTOR OF STUDENT RELATIONS</th>
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<tr>
<th>COLLEGE STUDENT SERVICES COUNCIL</th>
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</thead>
</table>

Appeal of Denial of Use of Literature Table

Any individual, registered student, or recognized student club or organization which has been denied access to the student literature tables or has been required to halt distribution based on procedure 10 may appeal the denial or requirement to halt distribution. The appeal shall be in writing and shall be directed to the Director of Student Services within 10 calendar days of the denial or requirement to halt distribution. The Director of Student Services 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 or uphold the denial or required halt of distribution. The decision of the College Student Services Council shall be final.

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

COLLEGE RESPONSIBILITIES*

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

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

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

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

1. Students will take responsibility for their own learning and for succeeding in their courses by:
   a. Following course requirements as presented in course syllabi;
   b. Attending all of their classes;
   c. Preparing for classes and completing assignments on time;
   d. Contacting their instructor regarding work missed in the case of an absence;
   e. Cooperating with their instructor and other students to create a positive learning atmosphere;
   f. Contributing effectively to class activities.

2. Students will be academically and intellectually honest in all classes, examinations, and learning activities. (The College, by regulation, will discipline students who cheat and/or copy the work of others; dishonesty is a serious offense and will be dealt with appropriately.)

3. Students will contribute to a positive learning environment by conducting themselves appropriately. (The College prohibits acts which interfere with the rights of others to seriously pursue an education. For more details on the regulations of the College, see section entitled Student Rights, Responsibilities, and Conduct.)

SPECIAL PROGRAMS AND SERVICES

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

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

- Career Counseling—Career counseling involves various assessments, career information, and career decision making assistance.
- Employment Counseling—Employment counseling includes job search techniques, resume and cover letter development, interviewing skill development, and employment projections, including many information sources.
- Job Search—CES provides employer job postings, job fairs, and an online resume file accessible by employers. Job postings are on a Web-based system called CES JobLink which is available for use by students and alumni seven days a week, 24-hours per day. CES JobLink and other links to job boards may be found on the Internet at www.lcc.edu/ces.
- Professional Assessments—CES provides assessments of competencies in specific areas, employee development, and employer assistance in hiring and certification testing.

Resources—CES provides a wide range of information involving careers, college majors, employment projections, labor market trends, "hot jobs," salary ranges, and company data.

Career and Employment Services has a website which provides an in-depth view of services and information. The site is located at www.lcc.edu/ces.

Counseling and Advising Services provide academic advising and counseling and assist students with personal and interpersonal issues and concerns; referral to community human services agencies for further professional assistance; career counseling and educational planning to facilitate career decisions, choice of major, and course selection. Call (517) 433-1904 for appointments and information, or check the website (www.lcc.edu/csd) for additional information.

The Office of Extension and Community Education (ECE) offers educational services to LCC’s on and off-campus students. More than 20 Learning Centers currently exist in Lansing and the six surrounding counties. Classes offered at these off-campus centers include general education core requirements, as well as personal interest courses. Students can register for classes and arrange for assessment testing and advising in select locations. ECE's three full-service facilities are the Livingston County Center in Howell, the Clinton County Center in St. Johns, and the Harry Hill Vocational Center in Lansing. Each center provides on-site registration, academic counseling, assessment testing, computer labs, math labs and other services, plus free parking. Continuing Education classes are offered throughout the ECC office along with several youth programs including Summer College, Summer Camp and Saturday School. Other programs include the STAR institute which offers associate degrees for area youth, and career counseling for job seekers at the Capital Area Michigan Works! Center in Lansing.

Information for Persons with Disabilities

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

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

Handicap-accessible parking is available and clearly identified at Lansing Community College. For more information, call the office of Planning Services at (517) 483-1788.

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

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

Library Information Services provides information and research assistance, library resources, Internet access, interlibrary loan services, book searches by phone, and library instruction. The library also has 400 study seats, including 23 multimedia and 15 group study rooms. The library website (www.lcc.edu/library) provides access and off campus to the library catalog, electronic books and government documents, full-text periodicals articles, electronic course reserves, resource guides, credible web sites and an email research help service.

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

Programs within the Multicultural Center include:

- The Limited English Proficiency Program—provides counseling, academic advising, registration assistance, financial aid assistance, multilingual translations and intensive English training for students with limited English skills (telephone number: 517-483-1216).
- Minority Outreach and Recruitment—assists in the recruitment of minority students; develops and maintains community contact with various minority organizations, clubs, and associations; identifies problems and removes barriers that inhibit minority students’ success; coordinates and plans special cultural/ethnic celebrations and receptions; and serves as an advocate on behalf of minority students (telephone number: 517-483-1053).
- Native American Leadership Program (NALP)—provides counseling and academic advising and assistance with admissions, registration, and financial aid for Native American students (telephone number: 517-483-1058).
- Mentoring Program—provides mentors for first-year students to advise and support them during their time of transition and adjustment to Lansing Community College (telephone number: 517-483-1053).

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

ADA/504 Coordinator—The Director of Equal Opportunity serves as the ADA/504 Coordinator. The Director works with students, faculty and staff who have concerns related to physical and programmatic accessibility, a disability and reasonable accommodations (telephone number: 517-483-5232).
• **Title IX Coordinator**—The Director of Equal Opportunity serves as the Title IX Coordinator. The Director works with faculty, staff, and students to resolve concerns pertaining to discrimination on the basis of sex in education programs and activities (telephone number: 517-483-5232).

• **Diversity Programs**—The Office of Equal Opportunity and Multicultural Center provide cultural educational experiences through national speakers and cultural workshops. Staff work with the campus community to institutionalize diversity throughout the curriculum and provide cross cultural communication training and development opportunities (telephone number: 517-483-5235).

STAR Institute is a unique program designed to develop students into creative, flexible, and skilled workers for the 21st century. High school juniors and seniors can spend half-days at the STAR Institute earning Lansing Community College credits, pursuing high-level preparation for top earning careers, and getting a jump start on a college career. Students spend the other half of their day at their local high schools. The Institute's two career programs are Computer Information Technology and Geographic Information Systems. For additional STAR Institute information, call (517) 338-1956, or visit the web site at www.lcc.edu/star.

**Student Orientation** is an informational program designed for new and returning students. Find out about college academic programs and academic support services including admissions, financial assistance, registration, parking and student IDs. Explore the campus with an LCC tour guide to see our modern, high-tech facilities and classrooms. Make a connection with faculty, counselors and advisors. Visit our cafeterias and student lounges where you can enjoy lunch and take a break with other students. If you can't make it to campus, visit us on-line at www.lcc.edu/orientation. For more information call (517) 483-5323.

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

**Tutoring Services**, offered through Library Information Services, provides free tutoring to students enrolled in LCC courses. Professional and peer tutors help students develop course competencies and study strategies. Individual appointments, study groups, Supplemental Instruction, and drop-in tutoring sessions are available on a first-come-first-served basis. Applications for tutoring are available at the Tutoring Services office or on the web at http://www.lcc.edu/tutorial or by calling (517) 483-1206.

The **Women's Resource Center** provides services and programs in support of women and men at Lansing Community College, including financial assistance with tuition, textbooks, transportation, and child care costs, academic advising, reentry support, and referral services. For additional information, visit the Center in the Gannon Vocational Technical Building, Suite 2300, or call (517) 483-1199, or visit our web site at www.lcc.edu/counseling/wmrc.htm.
What BCI Can Do for You

The Business & Community Institute at Lansing Community College is one of your most comprehensive locally based resources for customized training and consulting for business and industry in mid-Michigan. We want to be your preferred training provider, work hard to earn your trust and respect, and build a long-term business relationship with you. We will listen and understand your important business goals and issues and can design customized training to help build leaders, increase productivity, boost sales performance, manage change, and improve overall work performance. In the past two years, BCI has trained nearly 18,000 people in more than 350 area businesses and organizations. 85% of the employers we work with become repeat customers.

More than ever before, companies are using the BCI as their source for workforce development, training project management, and assessment and educational consulting.

Types of Programs and Services Offered

BCI can provide your organization with a variety of programs including: non-credit/CEU courses; contact hour-based courses; LCC credit courses; and a growing number of customized virtual and hybrid programs. In addition, the BCI offers college courses that will lead to business and industry Information Technology Certification. Other services include training needs assessment, job profiling and skill development, consulting, and facilities rental/conference services. Our Small Business Development Center offers counseling and training to help you start and maintain your own small business.

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

- Business and Industry Certification in Information Technologies (IT)
- Technical Skills/Skilled Trades
- Microcomputer Software Applications/Business Software
- People Skills and Team Building for a Collaborative Workplace
- Human Resource and Management Development
- Quality Assurance, Quality Core Tools, and Continuous Improvement
- Lean Manufacturing, Supply Chain Management, and Project Management
- Vocational ESL (English as a Second Language) “job task-based” programs
- Speech and Handwriting Recognition

Where BCI Customized Training Programs Are Offered

Programs can be delivered on site at your place of business or at a nearby training site of your choice. Programs may also be held on the LCC campus in downtown Lansing, or at one of our suburban Learning Center sites. Our Laptop Labs travel to many companies to provide convenient on-site computer software training on any day of the week or on any shift. It's your choice!

Contact a BCI account executive today and you will be on your way to meeting your business education and training needs in a cost-effective way. You can call the BCI at (517) 483-1857. Or, call LCC's toll-free line at 1-800-644-4LCC and ask to be connected to the BCI. Visit us on the web at: www.lcc.edu/bci.
The English Language & Culture Center of International Programs

GENERAL INFORMATION
The English Language and Culture Center (ELCC) provides intensive English language instruction primarily to international students who need to improve their English skills before beginning college-level academic coursework. The Center also provides customized English language and American culture instruction to groups that need specialized programs for professional or other activities. The ELCC is located in the International Programs Office, and its courses are non-credit. The ELCC issues I-20 forms to international students.

COURSES
The ELCC offers the following courses at 6 different levels:

- COURSES: Grammar, Speaking/Listing, Reading and Writing
- LEVELS: High Beginning, Intermediate I and II, and Advanced I, II, and III
- INSTRUCTIONAL HOURS: 6 hours/week
- SESSION LENGTH: 8 weeks

TOEFL preparation courses (3 hours/week) are also offered in each session.

TUITION & FEES
Contact the ELCC office at (517) 483-1006.

APPLICATION & INFORMATION
To apply or obtain more information, call the ELCC office at (517) 483-1006 or call LCC's toll-free line at 1-800-644-4LCC and ask to be connected to the ELCC. Or check our website at: http://www.lansingcc-mi.us/executive/intprog/ELCC/index.htm

COURSE DESCRIPTIONS

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Type</th>
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<tbody>
<tr>
<td>NCEL 111</td>
<td>High Beginning Speaking/Listening</td>
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<td>NCEL 112, 113</td>
<td>Intermediate Speaking/Listening I and II</td>
<td>non-credit</td>
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<tr>
<td>NCEL 114, 115, 116</td>
<td>Advanced Speaking/Listening I, II, and III</td>
<td>non-credit</td>
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Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in English speaking and listening. Designed to provide American English language instruction through listening and speaking exercises for non-native students who wish to pursue college-level coursework. Students will practice the production of target sounds, discussing various topics, note-taking, and various other tasks to develop oral and listening skills.

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<th>Course</th>
<th>Title</th>
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<tr>
<td>NCEL 121</td>
<td>High Beginning Reading</td>
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<td>NCEL 122, 123</td>
<td>Intermediate Reading I and II</td>
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<tr>
<td>NCEL 124, 125, 126</td>
<td>Advanced Reading I, II, and III</td>
<td>non-credit</td>
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Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in reading English. Designed to develop increased reading proficiency for non-native students who wish to pursue college-level courses. Students will read various materials that may encounter during academic studies. Emphasizes vocabulary building, gaining reading speed, summarizing main ideas, note-taking, and various reading strategies.

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<thead>
<tr>
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<th>Title</th>
<th>Credit Type</th>
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<td>NCEL 131</td>
<td>High Beginning Writing</td>
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<td>NCEL 132, 133</td>
<td>Intermediate Writing I and II</td>
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<tr>
<td>NCEL 134, 135, 136</td>
<td>Advanced Writing I, II, and III</td>
<td>non-credit</td>
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</tbody>
</table>

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in English writing. Designed to help non-native students improve their writing skills in preparation for college courses. Emphasizes process-oriented writing, including brainstorming, outlining, drafting, and revising. Students will work on writing well-developed and cohesive paragraphs and essays as well as learning various rhetorical styles.

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<th>Course</th>
<th>Title</th>
<th>Credit Type</th>
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<tbody>
<tr>
<td>NCEL 141</td>
<td>High Beginning Grammar</td>
<td>non-credit</td>
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<tr>
<td>NCEL 142, 143</td>
<td>Intermediate Grammar I and II</td>
<td>non-credit</td>
</tr>
<tr>
<td>NCEL 144, 145, 146</td>
<td>Advanced Grammar I, II, and III</td>
<td>non-credit</td>
</tr>
</tbody>
</table>

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in standard American English grammar. Designed to help students increase their proficiency in writing, reading, and speaking and listening. Emphasizes grammatical structures in various contexts, including verb structures, articles, logical connectors, comparatives and conditionals. Attention will be given to grammatical forms and their appropriate use.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Type</th>
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</thead>
<tbody>
<tr>
<td>NCEL 151</td>
<td>TOEFL Preparation</td>
<td>non-credit</td>
</tr>
</tbody>
</table>

Prerequisite: Intermediate Grammar II
Two-session sequence in TOEFL preparation. Designed to prepare students for the computer-based TOEFL test. Will help students become familiar with particular computer-based TOEFL tests, including the grammar, vocabulary, and listening comprehension materials frequently encountered in these tests. Students also become familiar with the TOEFL writing (TWE) format.

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Type</th>
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<tbody>
<tr>
<td>NCEL 191</td>
<td>Pronunciation Lab</td>
<td>non-credit</td>
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</tbody>
</table>

Prerequisite: None
Designed for students at any level to improve their American English pronunciation by extensive practice on vowels, consonants, stress, and intonation. The course also covers reductions, linking, and elision, which are typical trouble areas for non-native speakers of English. The lab meets three hours a week.

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TRANSFER INFORMATION

Students planning on transferring to a four-year institution should be aware that universities and colleges differ widely in the classes they accept for transfer. In order to achieve maximum transferability of courses, students should consult an academic advisor or counselor at the Transfer Counseling Services Department, located in the Business, Science, & Technology Center (B, S & T). Students interested in earning an LCC degree prior to transferring should consult an academic advisor or counselor.

Transfer guides are available for many, but not all, possible transfer programs. Students are encouraged to contact the Admissions Office at the transfer institution of interest to learn if there is a curriculum guide available for a preferred major or institution. It is the student's responsibility to verify that the classes transferred from LCC are those included in the transfer institution's guidelines and program requirements.

Transfer guides for additional transfer information may be obtained by requesting the information request card attached to the back cover of this publication, or on the Internet at www.lcc.edu/transfer, or by contacting LCC Counseling Services Department, Generic Academic Technical Center Suite 2300, Tel (517) 483-1904, fax (517) 483-1903, e-mail: jcsch@lcc.edu.

When requesting information, please indicate the area(s) of study and transfer college/university of choice(s).

Transfer guides are available for the following areas of study majors:

- Accounting
- Agricultural Science and Economics
- Advertising
- Agricultural Business Management
- Agriculture and Natural Resources Management
- Animal Science
- Anthropology
- Apparel Design
- Applied Ecology and Environmental Science
- Applied Geosciences
- Applied Liberal Studies
- Applied Mathematics
- Applied Physics
- Architectural Imaging
- Architecture
- Art
- Art History
- Athletic Training
- Atmospheric, Oceanic, and Space Sciences
- Audiology and Speech Sciences
- Automotive and Heavy Equipment Management
- Aviation Flight Science - Pilot
- Aviation Maintenance Technology
- Behavioral Science
- Biochemistry
- Biological Science
- Biology
- Biopsychology
- Biotechnology
- Broadcasting
- Building Construction Management
- Business Administration
- Banking
- Business Studies
- Economics
- Finance
- Food Industry Management
- Food Marketing
- Health Care Management
- Health Services Administration
- English
- History
- Home Economics
- Industrial Technology
- Mathematics
- Music
- Technology Special
- Engineering
- Administration
- Arts
- Astronautical
- Aerospace
- Biomedical
- Biotechnology
- Chemical
- Civil
- Computer
- Construction
- Electrical
- Environmental
- Geology
- Industrial and Operations Management
- Maritime
- Marine & Naval Architecture
- Material Science
- Mechanical
- Mining
- Music
- Nuclear
- Paper
- Surveying
- Engineering Technology
- Electrical/Electronics
- Heating, Ventilation, Air Condition and Refrigeration
- Heavy Equipment Service
- Manufacturing
- Mechanical Engineering
- Polymers & Coatings
- Product Design
- Environmental Studies
- Applications Studies
- Biology/Ecology
- Chemistry
- Conservation
- Consumer Safety & Management
- Communication Arts
- Computer Science
- Computer Networks and Systems
- Construction Management
- Criminal Justice
- Criminology
- Crop and Soil Science
- Dental Hygiene
- Dentistry Pre-Professional
- Dietetics
- E-Commerce
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Physical Therapy Assistant
Physician Assistant
Physics
Planning
Podiatry, Pre-Professional
Political Science
Printing Management/Marketing
Psychology
Public & Non-Profit Administration
Public Relations
Public Resource Management
Quality Management
Radiation Therapy Technology
Recruitment
Recreation Management
Social Science
Social Work

Sociology
Speech Pathology and Audiology
Sports Medicine
Sports Science
Surveying
Systems Analysis and Application Development
Telecommunication
Television Production
Textile and Apparel Studies
Design & Development
Marketing
Therapy
Therapeutic Recreation
Urban and Regional Planning
Veterinary Medicine
Water Purification Technology

Colleges/Universities for which transfer curricular guides are available are as follows (not all majors listed above are available at all transfer institutions):

- Alma College
- Aquinas College
- Baker College
- Bay de Noc Community College
- Books Institute
- Calvin College
- Central Michigan University
- Clark Atlanta University
- Cleary University
- College for Creative Studies
- Concordia University
- Davenport University/Lansing
- Eastern Michigan University
- Ferris State University
- Franklin University
- Grand Rapids Community College
- Grand Valley State University
- Johnson and Wales University
- Kellogg Community College
- Kentshall College of Art and Design
- Kettering University
- Lake Superior State University
- Lawrence Technological University
- Lk. Chiropractic College
- Michigan State University
- Michigan Technological University
- Moraine College
- National University of Health Sciences
- North Carolina University
- Northwood University
- Oakland University
- Olivet College
- Palmer College of Chiropractic
- Saginaw Valley State University
- School of the Art Institute of Chicago
- Sherman College of Chiropractic
- Spelman University
- Spring Arbor University
- Thomas M. Cooley Law School
- Tri-State University
- University of Detroit Mercy
- University of Michigan/Ann Arbor
- University of Michigan/Dearborn
- University of Michigan/Finel
- Walsh College
- Wayne State University
- Western Michigan University
- William Tyndale College

MACRAO TRANSFER AGREEMENT

In 1973 the Michigan Association of Collegiate Registrars and Admissions Officers proposed the MACRAO Transfer Agreement. The MACRAO Transfer Agreement created a system for the transfer of students from two-year to four-year institutions. The agreement stipulates that 30 semester credit hours of 100-level and above, comparable, general course work will be granted to smooth transferability to participating universities. These credits will be applied toward a student's general education requirements. Completion of requirements for the MACRAO Transfer Agreement does not necessarily mean that a student has completed the requirements for a specific Lansing Community College associate degree.

The basic two-year requirements are:

- English Composition: 6 semester hours minimum
- Science and Mathematics: 8 semester hours minimum
- Social Science: 8 semester hours minimum
- Humanities: 8 semester hours minimum

Effective Fall 2003, the following establishes the approved list of LCC courses under the four major distribution requirements for the MACRAO Transfer Agreement. A course can be used to satisfy only one category even though it may appear in more than one category. Only courses in which at least a 2.0 is received may be applied to this agreement.

1. English Composition (minimum of 6 semester credit hours)
   Any one from each group:
   1. WRIT 121 or WRIT 131
   2. WRIT 122 or ENGL 123 or WRIT 132 or ENGL 132

A student with waivers of WRIT 121 indicated on the transcript must elect a second course from the 200-level offerings in WRIT or ENGL. Waivers of WRIT 121 should be printed on the student's transcript.

NOTE: Areas below have 3-credit semester courses, and taking these courses may necessitate taking 3 courses to reach the 6 semester credit hour minimum.

II. Science and Mathematics (minimum of 8 semester credit hours)
   Choose courses in at least two (2) subject areas. With a minimum of one laboratory science course. Underlined courses indicate a laboratory course.
   - Biological Science: BIOL 121, 122, 128, 130, 141, 151, 152, 201, 202, 203 and 204, 210, 219, 225, 255, 312, 320, 321
   - Mathematics: MATH 121, 122, 126, 130, 141, 151, 152, 201, 202, STAT 210, 215
   Note: MUSD does not accept Math Blat courses for the science requirement.
   - Physical Science: ASTR 201, CHEM 125, 155, 151 and 152, PHYS 125, 129, 221

III. Social Science (minimum of 8 semester credit hours)
   Choose courses in at least two (2) subject areas :
   - Economics: ECON 201, 202, 213, 260
   - Geography: GEOG 120, 200, 302
   - Human Services: CRW 101, 201, 102, 106, 205, 300, 102, 200, 201, 202, 203, 204, 205, 206
   - Political Science: POLS 120, 121, 200, 270
   - Psychology: PSYC 200, 201, 202, 203, 204, 205
   - Sociology Anthropology: ANTH 251, SOCI 125, 254, 255, 260

IV. Humanities (minimum of 8 semester credit hours)
   Take one from the following combinations:
   - HIST 211 and 212 or 274; HUMS 211 and 212; HUMS 213 and 214; ENGL 211 and 212; PHIL 211 and 212; RELIG 211 and 212
   - OR
   - Take courses in at least two (2) of the following areas:
     - Art History: HUMS 211, 212
     - Foreign Language: FREN 121, 122, 201, 290; GERMAN 121, 122, 201, 300; JAPAN 121, 122, 201, 301; SPANISH 121, 122, 201, 202, 290 (Note: MUSD does not accept Foreign Language courses for the Humanities requirement)
     - History: ECON 213, HIST 150, 210, 211, 212, 214, 230, 230, 260
     - Humanities: HIST 240, 250; HUMS 140, 150, 213, 214, 215
     - Literature: ENGL 201, 202, 203, 206, 211, 212, 255, 260, 268, 269, 270, 280
     - Performing Arts: MUSC 169, 240, 241; THEA 210
     - Philosophy: PHIL 151, 152, 153, 211, 212, 260
     - Religion: RELIG 211, 212, 241, 242, 250

NOTES
1. Students are advised to also review specific transfer curricular guides. Some transfer institutions, for example, may require both a biological and physical science to satisfy the requirements for the degree.
2. Students seeking an LCC associate degree must fulfill specific graduation requirements including the LCC General Education Core requirements. See the General Information section of this catalog for additional details. For further information and advising, contact an LCC academic advisor or counselor located in Suite 2300, Common Vocational Technical Center, (517) 465-4712.

The following 4-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 University
- Concordia University
- Davenport University
- Eastern Michigan University
- Ferris State University
- Finlandia University
- Grand Valley State University
- Hope College
- Kalamazoo College
- Kettering University
- Lake Superior State University
- Lawrence Technological University
- Madonna University
- Michigan State University
- Michigan Technological University
- Northern Michigan University
- Northwood University
- Oakland University
- Olivet College
- Rochester College
- Saginaw Valley State University
- St. Mary's College
- Sierra Heights University
- Spring Arbor University
- Western Michigan University

*Some limitations may apply. Check with individual college/university.
CAREER PATHWAYS

The Michigan Career Preparation System is a structure designed to give all students a jump-start on their futures by providing them with opportunities to explore a variety of careers throughout their K-12 education and beyond. A component of the Career Preparation System is Career Pathways, broad categories of career options that share similar characteristics and whose employment requirements call for many common interests, strengths, and competencies. Career Pathways identify classes that can be taken in high school that will better prepare a student for college success. There are six Career Pathways identified in Michigan. They are:

- Arts and Communication
- Business, Management, Marketing and Technology
- Engineering/Manufacturing and Industrial Technology
- Health Sciences
- Human Services
- Natural Resources and Agriscience

Within each career pathway there are high school courses and areas of study that link to certificate and associate degree programs offered at Lansing Community College. Students can choose between certificate and associate degree programs designed to provide skills for immediate employment or job advancement. Each career pathway also offers several transfer programs for students who plan to pursue advanced degrees at four-year colleges and universities. LCC programs organized by career pathways can be found at www.lcc.edu/careerpathways. Students are encouraged to explore Career Pathways options.
DEGREE AND CERTIFICATE Programs

LANSING COMMUNITY COLLEGE
Where Success Begins

2003-2005 CATALOG
ASSOCIATE IN ARTS/ASSOCIATE IN SCIENCE DEGREES

(EFFECTIVE FALL 2003 - SUMMER 2008)

These are primarily transfer degrees. Students completing this curriculum will also satisfy the MACRAO Transfer Agreement between two-year and four-year institutions in Michigan. It is designed for students who intend to transfer to a four-year college or university to pursue a baccalaureate degree in one of the following:

- Associate in Arts
- Associate in Science

The specific requirements for these degrees are outlined below. A minimum of 60 credits is required. The guide consists of General Education Requirements and a Subject Area Concentration which may include Limited Choice Electives.

1. General Education Core Area Requirements
   - Minimum 17-20 credits
   - Core General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area. See Note 2.
   - Communication Core Area
   - Global Perspectives and Diversity Core Area
   - Mathematics Core Area
   - Science Core Area
   - Writing Core Area

2. Additional General Education MACRAO Requirements
   - Minimum 16-21 credits
   - Select credits to complete MACRAO requirements as listed in the approved MACRAO list (see Transfer Information) as follows:
     - English Composition
     - Science and Mathematics (See Note 4)
     - Social Science (See Note 5)
     - Humanities (See Note 5)

NOTES:
1. Select from the following list of Core courses for Section I:
   - Communication: ARTS 102, SIGN 160, SPCH 110, 130
   - Global Perspectives and Diversity: ECON 260, ENGL 211, 212, HUMS 210, 211, 212, 213, 214, MUSC 240, 241, PHIL 211, 212, POLS 260, SOC 120, 260
   - Mathematics: MATH 112, 121, 122, 126, 130, 141, 151, 152, 261
   - Science: ASTR 201, BIOL 120, 127, 145, 202, CHEM 135, 136, and 151, GEOG 230, SCI 121, 131, PHYS 120, 251
   - Writing: ENGL 122, 132, WRIT 121, 122, 131, 132

2. Meeting Core with a proficiency test may require additional MACRAO credits.
3. Also consult the transfer guides for requirements of specific four-year institutions (available in the Counseling and Advising Center or on the web at www.lcc.edu/transfer-guides).
4. If the Math course fulfilling CORE in Section I General Education Core Areas is on MACRAO, this requirement is met.
5. The Social Science and Humanities categories of MACRAO require 8 credits each, but you may use the 3-4 credits fulfilling Global Perspectives and Diversity Core (in Section I General Education Core Areas) toward one of these categories as well.

III. SUBJECT AREA CONCENTRATION and LIMITED CHOICE ELECTIVES

The following Subject Area Concentrations list the remaining required and recommended courses. Required courses already applied to this degree in Section I or II may be replaced with another approved course listed in the concentration. Credits for each course have been indicated in parentheses. A total of 60-63 credits is required. A.A. or A.S. indicates the degree awarded for each concentration.
ACCOUNTING, A.A.  
Curriculum Code: 0224

1. Complete ECON 201 and ECON 202 to satisfy part of the Section II Social Science MACRAO requirements.

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

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

4. Complete one of the following in addition to courses taken to satisfy Section I Mathematics Core Area and Section II Science and Mathematics MACRAO requirement. (3-5 credits):
   - MATH 121 College Algebra I (4)
   - MATH 122 College Algebra II and Trig (3)
   - MATH 125 College Algebra and Trig (5)
   - MATH 130 Finite Mathematics (4)

5. Complete a minimum of 4 credits from the list of Limited Choice Electives on the final page of this curriculum.

AFRICAN AMERICAN HISTORY, A.A.  
Curriculum Code: 0137

1. Complete HIST 211 and HIST 212 to satisfy Section II Humanities MACRAO requirement.

2. Complete the following required courses (27 credits):
   - ENGL 265 African-American Literature (4)
   - HIST 150 African-American History (4)
   - HIST 214 African History (4)
   - HIST 260 Conflict & Revolu Southern Africa (4)
   - HUMS 214 World Civilizations II (4)
   - HUMS 215 American Civilization (4)
   - SOCI 255 Contemporary Social Problems (3)

AMERICAN STUDIES, A.A.  
Curriculum Code: 0142

1. Complete HIST 211 and HIST 212 to satisfy Section II Humanities MACRAO requirement.

2. Complete the following required courses (20 credits):
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - HIST 214 African History (4)
   - HUMS 214 World Civilizations II (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, A.A.  
Curriculum Code: 0746

1. Complete HUMS 213 or HUMS 214 to satisfy the Section I Global Perspectives and Diversity Core Area requirement.

2. Complete PHIL 211 and PHIL 212 to satisfy the Section II Humanities MACRAO requirements.

3. 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)

4. Complete a minimum of 8 credits from the following:
   - ENGL 211 World Literature I (4)
   - ENGL 212 World Literature II (4)
   - HUMS 120 Western Art and Music History (4)
   - HUMS 215 American Civilization (4)
   - Any foreign language with course numbers 201 or 202 (4)

BIOLOGY, A.A.  
Curriculum Code: 0221

1. Complete MATH 121, CHEM 151 and 101 to satisfy Section I Mathematics Core Area and Science Core Area requirements.

2. Complete the following required courses (12 credits):
   - BIOL 127 Cell Biology (4)
   - BIOL 128 Organismal Biology (4)
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 192 General Chemistry Lab II (1)

3. Complete a minimum of 15 credits from the following:
   - BIOL 201 Human Anatomy (4)
   - BIOL 202 Human Physiology (4)
   - BIOL 205 Microbiology (3)
   - BIOL 204 Microbiology Laboratory (1)
   - BIOL 210 Natural Resource Conservation (4)
   - BIOL 250 Botany (4)
   - BIOL 265 Zoology (4)
   - BIOL 270 Human Genetics (3)
   - BIOL 275 Molecular Biology I (4)
   - CHEM 251 Organic Chemistry I (4)
   - CHEM 252 Organic Chemistry Lecture II (4)
   - CHEM 272 Organic Chemistry Laboratory (2)
   - ENVR 122 Enviro Smppl & Instrumentation (4)
   - STAT 170 Introduction to Statistics (3)

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>CHEM 161</td>
<td>CHEM 162</td>
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<tr>
<td>MATH 121</td>
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BUSINESS, A.A.  
Curriculum Code: 2222

1. Complete ECON 201 and ECON 202 in addition to POLS 120 or POLS 121 to satisfy the Section II Social Science MACRAO requirement.

2. Complete the following required courses (17 credits):
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - BUSN 116 Introduction to Business (3)
   - MGMT 225 Principles of Management (3)
   - MKET 230 Principles of Marketing (3)

3. Complete one of the following (3 credits):
   - CSE 100 Introduction to Computers (3)
   - CPSC 150 Introduction to Computers (3)

4. Complete a minimum of 5-6 credits from the list of Limited Choice Electives on the final page of this curriculum.

CHEMISTRY, A.S.  
Curriculum Code: 0117

1. Complete MATH 151, CHEM 151 and CHEM 161 to satisfy Section I Mathematics Core Area and Science Core Area requirements.

2. Complete the following required courses (20 credits):
   (Note: In order to complete sequences, MATH 253 and PHYS 252 are also recommended.)
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 162 General Chemistry Lab II (1)
   - CHEM 251 Organic Chemistry Lecture I (4)
   - CHEM 252 Organic Chemistry Lecture II (4)
   - CHEM 262 Quantitative Analysis (3)
   - CHEM 272 Organic Chemistry Laboratory (2)
   - MATH 152 Calculus II (4)

3. Complete a minimum of 8 credits from the following:
   - BIOL 157 Cell Biology (4)
   - PHYS 251 Physics I: Mechanics (5)
   - STAT 215 Intro to Probability and Stats (4)

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>CHEM 152</td>
<td>CHEM 251</td>
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<tr>
<td>CHEM 161</td>
<td>CHEM 162</td>
<td>CHEM 262</td>
<td>CHEM 272</td>
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<tr>
<td>MATH 151</td>
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COMPUTER SCIENCE, A.S.  
Curriculum Code: 0163

1. Complete MATH 151 and PHYS 251 to satisfy Section I Mathematics Core Area and Science Core Area requirements.

2. Complete the following required courses (20 credits)
   - CPSC 230 Algorithms and Computing w/C++ (4)
   - CPSC 231 Computing and Data Structures (4)
   - CPSC 250 Introduction to Computers (3)
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)

3. Complete a minimum of 6 credits from the following:
   - MATH 254 Intro to Differential Equations (3)
   - MATH 260 Linear Algebra (3)
   - PHYS 252 Phys II: Electromagnetic (5)
   - STAT 215 Intro to Probability and Stats (4)

CRIMINAL JUSTICE, A.A.  
Curriculum Code: 0146

1. Complete the following required courses (15 credits):
   - CJUS 101 Intro to Criminal Justice (3)
   - CJUS 102 Crime Causation and Conditions (3)
   - CJUS 103 Criminal Law (3)
   - CJUS 104 Intro to Juvenile Justice (3)
   - CJUS 131 Introduction to Corrections (3)

2. Complete a minimum of 6 credits from the following:
   - CJUS 255 Human Relations/Criminal Just (3)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 202 Psychology of Personality (3)
   - PSYC 206 Social Psychology (3)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 250 Abnormal Psychology (3)
   - SOC 100 Introduction to Sociology (4)
   - SOC 200 Contemporary Social Problems (3)
   - SOC 200 Race and Ethnicity (3)

ECONOMICS, A.A.  
Curriculum Code: 0230

1. Complete MATH 121 to satisfy Section I Mathematics Core Area requirement.

2. Complete ECON 201 and ECON 202 to satisfy part of the Section II Social Science MACRAO requirements.

3. Complete the following required course (3 credits):
   - MATH 122 College Algebra I and Trig (3)

4. Complete additional courses from the LCC MACRAO list and/or from the following list (22 credits). (See Note 1):
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - CPSC 126 Introduction to Computers (3)
   - MATH 253 Calculus II (3)
   - MATH 254 Intro to Differential Equations (3)
   - MATH 250 Linear Algebra (3)

NOTE:
1. Courses in social sciences, mathematics, statistics and computer science are recommended.
ELEMEHATY EDUCATION, A.A.  Curriculum Code: 0747

1. ISCI 121 is recommended to satisfy Section I Science Core Area requirement.

2. Complete POLS 120 and SOCL 120 to satisfy the Section II Social Science MACRAO requirement, ISCI 122 is recommended to satisfy the Section II Science and Math MACRAO requirement.

3. Complete the following required courses (21 credits):
   - ARTS 240 Art for Elementary Teachers (3)
   - EDUC 201 Teacher Education Practicum (2)
   - EDUC 204 Educational Psychology (3)
   - EDUC 220 Introduction to Education (3)
   - EDUC 230 Internship: Special Education (3)
   - MATH 201 Math for Elem. Teachers I (4)
   - MUSC 200 Music Fund for Elem. Teachers (3)

4. Complete 4-8 credits from the following list:
   - ANTH 270 Cultural Anthropology (3)
   - BIOL 220 Nature Studies for Educators (4)
   - EDUC 226 Reading in Elementary Schools (3)
   - ENGL 258 Children's Literature (4)
   - ENGL 258 Science Fiction (4)
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - ENGL 267 British Literature II (4)
   - GEOG 121 Physical Geography (3)
   - GEOG 200 World Regional Geography (4)
   - MATH 202 Math for Elem. Teachers II (4)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 221 Child Psychology (3)
   - SOCL 200 Race and Ethnicity (3)

ENGINEERING, A.S.  Curriculum Code: 0112

1. Complete MATH 151, CHEM 151 and CHEM 161 to satisfy the Section I Mathematics Core Area and Sciences Core Area requirements.

2. Complete the following required courses (21 credits):
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)
   - MATH 254 Intro to Differential Equations (3)
   - PHYS 251 Physics I: Mechanics (5)
   - PHYS 252 Physics II: Electromagnetism/Optics (5)

3. Complete a minimum of 4 credits from the following:
   - CHEM 152 General Chemistry Lecture II (2)
   - CHEM 162 General Chemistry Lab I (1)
   - CPSC 200 Algorithms and Computing with C++ (4)
   - CPSC 201 Computing and Data Structures (4)
   - MATH 260 Linear Algebra (3)
   - MATH 281 Honors Math Seminar I (1)
   - MATH 282 Honors Math Seminar II (1)
   - STAT 215 Intro to Probability and Stats (4)

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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| MATH 151 | \n
FINE ARTS, A.A.  Curriculum Code: 0748

1. Complete ARTS 102 and HUMS 211 to satisfy Section I Communication Core Area and Global Perspectives and Diversity Core Area requirements.

2. Complete HUMS 212 to satisfy the additional Section II Humanities MACRAO requirements.

3. Complete the following required courses (9 credits):
   - ARTS 103 3-Dimensional Design (3)
   - ARTS 131 Drawing I (3)
   - ARTS 132 Figure Drawing (3)

4. Complete 8 credits from the following:
   - ARTS 140 Printmaking I (4)
   - ARTS 141 Printmaking II (4)
   - ARTS 145 Screen Printing I (4)
   - ARTS 146 Screen Printing II (4)
   - ARTS 200 Painting I (4)
   - ARTS 201 Painting II (4)
   - ARTS 204 Watercolor I (4)
   - ARTS 205 Watercolor II (4)

5. Complete a minimum of 8 credits from the list of Limited Choice Electives on the final page of this curriculum.

FOREIGN LANGUAGE, A.A.  Curriculum Code: 0132

1. Complete the following required course (3 credits):
   - SPCH 290 Interpersonal Communication (3)

2. Complete one of the following four choices (A, B, C, D) (16 credits):
   - A. FREN 121 Elementary French I (4)
   - FREN 122 Elementary French II (4)
   - FREN 201 Intermediate French I (4)
   - FREN 202 Intermediate French II (4)
   - B. GRMN 121 Elementary German I (4)
   - GRMN 122 Elementary German II (4)
   - GRMN 201 Intermediate German I (4)
   - GRMN 202 Intermediate German II (4)
   - C. JAPN 121 Elementary Japanese I (4)
   - JAPN 122 Elementary Japanese II (4)
   - JAPN 201 Intermediate Japanese I (4)
   - JAPN 202 Intermediate Japanese II (4)
   - D. SPAN 121 Elementary Spanish I (4)
   - SPAN 122 Elementary Spanish II (4)
   - SPAN 201 Intermediate Spanish I (4)
   - SPAN 202 Intermediate Spanish II (4)

3. Complete a minimum of 8 credits of any foreign language with course numbers 121, 122, 201, or 202 other than those chosen as the major language of concentration from the choices in the preceding two sections.

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GEOGRAPHY, A.A.  
Curriculum Code: 0749

1. Complete GEG 260 to satisfy Section II Social Science MACRAO requirement.

2. Complete the following required courses (9 credits):
   - GEG 120 Introduction to Geography (3)
   - GEG 121 Physical Geography (3)
   - GEG 262 Geography of North America (3)

3. Complete a minimum of 16 credits from the following:
   - ANTH 207 Cultural Anthropology (3)
   - ECON 120 Power, Authority and Exchange (4)
   - ECON 260 Comparative Economic Systems (3)
   - GEG 203 Economic Geography (3)
   - GRET 205 Principles Geographic Info Sys (3)
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)
   - SOCI 120 Introduction to Sociology (4)
   - STAT 170 Introduction to Statistics (3)
   - Any foreign language with course numbers 121, 122, 201, or 202 (4)

HISTORY, A.A.  
Curriculum Code: 0197

1. Complete HIST 211 and HIST 212 to satisfy the Section II Humanities MACRAO requirements.

2. Complete the following required courses (12 credits):
   - HIST 214 African History (4)
   - HUMS 213 World Civilizations I (4)
   - HUMS 214 World Civilizations II (4)

3. Complete a minimum of 16 credits from the following:
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - HIST 150 African-American History (4)
   - HIST 210 Studies in American History (4)
   - HIST 220 Michigan History (4)
   - HIST 230 British History (4)
   - HIST 260 Conflict & Revolution Southern Africa (4)
   - RELG 250 Religions of East Asia (4)

HUMANITIES, A.A.  
Curriculum Code: 0119

1. Complete HUMS 213 and HUMS 214 to satisfy Section II Humanities MACRAO requirements.

2. Complete a minimum of 28 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)
   - ENGL 260 African-American Literature (4)
   - HIST 211 U.S. History to 1776 (4)
   - HIST 212 U.S. History: 1776 to Present (4)
   - HUMS 120 Western Art and Music History (4)
   - HUMS 123 Mythology (4)
   - HUMS 211 History of Art I (4)
   - HUMS 212 History of Art II (4)
   - PHIL 151 Intro Logic & Critical Think (4)
   - PHIL 152 Introduction to Ethics (4)
   - PHIL 153 Knowledge and Reality (4)
   - PHIL 211 World Philosophies I (4)
   - PHIL 212 World Philosophies II (4)
   - RELG 211 World Religions I (4)
   - RELG 212 World Religions II (4)
   - RELG 250 Religions of East Asia (4)

INTERNATIONAL STUDIES, A.A.  
Curriculum Code: 0252

1. Complete HUMS 213 to satisfy the Section I Global Perspectives and Diversity Core Area requirement.

2. Complete HUMS 214, GEG 200 and POLS 120 to satisfy additional Section II Humanities and Social Science MACRAO requirements.

3. Complete the following required courses (6 credits):
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)

4. Complete 9 credits of any foreign language with course numbers 121, 122, 201, or 202.

5. Complete a minimum of 11 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - ECON 120 Power, Authority and Exchange (4)
   - GEG 203 Economic Geography (3)
   - HIST 214 African History (4)
   - HIST 230 British History (4)
   - PHIL 211 World Philosophies I (4)
   - PHIL 212 World Philosophies II (4)
   - POLS 270 Politics & Government of Japan (3)
   - RELG 211 World Religions I (4)
   - RELG 212 World Religions II (4)
   - SOCI 120 Introduction to Sociology (4)
   - SOCI 188 Intro to Latin Studies (3)
   - SOCI 260 Race and Ethnicity (3)
   - SOCI 280 Intro to Japanese Culture (3)
KINESIOLOGY, A.S.  

1. Complete MATH 122 and BIOL 202 to satisfy Section I Mathematics Core Area and Science Core Area requirements.

2. Complete PSYC 200 and PHYS 221 to satisfy additional Section II Social Science and Science and Math MACRAO requirements.

3. Complete the following required courses (25 credits) (See Note 1):
   - BIOL 201 Human Anatomy (4)
   - CHEM 151 General Chemistry Lecture I (4)
   - CHEM 151 General Chemistry Lab I (1)
   - EMSA 100 First Aid and CPR (2)
   - PFPT 100 Total Fitness (2)
   - PFHN 163 Health & Wellness (2)
   - PFKN 250 Foundations of Kinesiology (2)
   - PFKN 250 Measurements in Kinesiology (3)
   - PFKN 250 Growth & Motor Behavior (3)
   - Activity Course (See Notes 2 and 3)

4. It is recommended that students also take PFPT 128 Human Nutrition (3 credits).

NOTES:
1. Kinesiology majors pursuing an Athletic Training Specialization should also complete PFKN 210 - Athletic Training Principles.
2. Kinesiology majors with an Exercise Science emphasis should complete one activity course with one from PFST, PFDA, PFST, PFSP, or PFWT.
3. Kinesiology majors with a Physical Education Teaching emphasis should complete one course from each activity category: aquatic, conditioning, dance, racquet and individual sports, and team sports.

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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LIBERAL ARTS, A.A.  

1. Complete a minimum of 25 credits from the list of Limited Choice Electives shown on the final page of this curriculum. The following courses are recommended choices:
   - BIOL 120 Environmental Science (4)
   - CHEM 135 Chemistry in Society (4)
   - CPSC 120 Introduction to Computers (3)
   - ENGL 258 American Literature II (4)
   - MATH 130 Finite Mathematics (4)
   - PFPT 100 Total Fitness (2)
   - PFHN 163 Health & Wellness (2)
   - PHIL 152 Introduction to Ethics (4)
   - POLS 120 American Political System (4)
   - SOCL 120 Introduction to Sociology (4)
   - SPCH 260 Intercultural Communication (3)

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

LITERATURE, A.A.  

1. Complete ENGL 211 and ENGL 212 to satisfy Section I Humanities MACRAO requirement.

2. Complete a minimum of 6 credits from the following (8 credits):
   - ENGL 201 Introduction to Poetry (4)
   - ENGL 202 Introduction to Drama (4)
   - ENGL 203 Introduction to Prose (4)

3. Complete a minimum of 20 credits from one of the following choices (A or B):
   A. ENGL 206 Children's Literature (4)
      - ENGL 255 American Literature I (4)
      - ENGL 256 American Literature II (4)
      - ENGL 258 African-American Literature (4)
      - ENGL 258 British Literature I (4)
      - ENGL 257 British Literature II (4)
      - ENGL 290 Shakespeare (4)
      - HUMS 160 Mythology (4)
      - PHIL 151 Intro to Logic & Critical Think (4)
      - RELIG 211 Old Testament Literature (4)
      Any foreign language course with number 121, 122, 201, or 202 (4)
   B. EDUC 201 Teacher Education Practicum (2)
      - EDUC 204 Educational Psychology (4)
      - EDUC 205 Introduction to Education (3)
      - ENGL 298 Children's Literature (4)
      - ENGL 225 American Literature I (4)
      - ENGL 226 American Literature II (4)
      - ENGL 267 British Literature I (4)
      - ENGL 267 British Literature II (4)
      - PSYC 200 Introduction to Psychology (4)

MATHEMATICS/PHYSICS, A.S.  

1. Complete MATH 151 and PHYS 251 to satisfy Section I Mathematics Core Area and Science Core Area requirements.

2. Complete the following required courses (19 credits):
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)
   - MATH 254 Intro to Differential Equations (3)
   - MATH 260 Linear Algebra (3)
   - PHYS 252 Phys II: Electromagnetic/Optics (5)

3. Complete a minimum of 6 credits from the following:
   - CHEM 151 General Chemistry Lecture I (4)
   - CHEM 151 General Chemistry Lab I (1)
   - CPSC 220 Algorithms and Computing w/C++ (4)
   - CPSC 230 Computing and Data Structures (4)
   - CPSC 250 Computer Science Structures (3)
   - MATH 281 Honors Math Seminar I (1)
   - MATH 282 Honors Math Seminar II (1)
   - STAT 215 Intro to Probability and Stats (4)

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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## MEDICAL PRE-PROFESSIONAL, A.S.

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

1. Complete MATH 122, CHEM 151 and CHEM 161 to satisfy Section I
Mathematics Core Area and Science Core Area requirements.

2. Complete PSYC 200 to satisfy Section II Social Science MACRAO requirement.

3. Complete the following required courses (16 credits):
   - BIOL 127 Cell Biology (4)
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 162 General Chemistry Lab II (1)
   - PHYS 221 Introductory Physics I (4)
   - PHYS 222 Introductory Physics II (4)

4. Complete a minimum of 10 credits from the following:
   - BIOL 201 Human Anatomy (4)
   - CHEM 251 Organic Chemistry Lecture I (4)
   - CHEM 252 Organic Chemistry Lecture II (4)
   - CHEM 272 Organic Chemistry Laboratory (2)

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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## PHILOSOPHY, A.A.

1. Complete PHIL 211 and PHIL 212 to satisfy the Section II Humanities
MACRAO requirement.

2. Complete the following required courses (8 credits):
   - PHIL 151 Intro Logic & Critical Think (4)
   - PHIL 152 Introduction to Ethics (4) (See Note 1)
   - PHIL 153 Knowledge and Reality (4) (See Note 1)

3. Complete a minimum of 20 credits from the following:
   - HUMS 120 Western Art and Music History (4)
   - HUMS 125 Art of Being Human (4)
   - HUMS 213 World Civilizations I (4)
   - HUMS 214 World Civilizations II (4)
   - HUMS 225 Get Lake Native Amer Hist & Trad (4)
   - PHIL 260 Contemporary Ethical Problems (4)
   - RELG 211 World Religions I (4)
   - RELG 212 World Religions II (4)

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

NOTE:
1. Students may elect to take either PHIL 150 or PHIL 153 but not both.

## POLITICAL SCIENCE, A.A.

1. Complete POLS 120 and SOCL 120 to satisfy the Section II Social Science
MACRAO requirement.

2. Complete the following required courses (7 credits):
   - POLS 201 State and Local Government (4)
   - POLS 260 Comparative Political Systems (3)

3. Complete a minimum of 10 credits from the following:
   - POLS 270 International Relations (3)
   - POLS 280 Politics & Government of Japan (3)

## PSYCHOLOGY, A.A.

1. Complete PSYC 200 to satisfy part of Section II Social Science MACRAO
requirement.

2. Complete a minimum of 25 credits from the following:
   - PSYC 201 Psychology of Personality (3)
   - PSYC 202 Social Psychology (3)
   - PSYC 203 Human Growth and Development (3)
   - PSYC 204 Cognitive Psychology (3)
   - PSYC 213 Biological Psychology (3)
   - PSYC 250 Abnormal Psychology (3)

B. Complete a minimum of 13 credits:
   - ANTH 270 Cultural Anthropology (3)
   - ANTH 271 Medical Anthropology (3)
   - ECON 201 Principles of Econ-Micro (3)
   - EDUC 204 Educational Psychology (3)
   - POLS 240 Introduction to Public Policy (3)
   - POLS 260 Comparative Political Systems (3)
   - PSYC 215 Psych of Death: Prep for Living (3)
   - PSYC 220 Educational Psychology (3)
   - PSYC 221 Child Psychology (3)
   - PSYC 222 Adolescent Psychology (3)
   - PSYC 240 Psychology of Human Sexuality (3)
   - SOCI 120 Introduction to Sociology (4)
   - SOCI 254 Marriage and Family (3)
   - SOCI 255 Contemporary Social Problems (3)
   - SOCI 280 Race and Ethnicity (3)

Any foreign language with course numbers 121, 122, 201, or 202 (4)
### RELIGION, A.A.

Curriculum Code: 0751

1. Complete RELG 211 and RELG 212 to satisfy the Section II Humanities MACRAO requirement.

2. Complete the following courses (27 credits):
   - ANTH 270 Cultural Anthropology (3)
   - ENGL 211 World Literature I (4)
   - HUMS 100 Mythology (4)
   - PHIL 152 Introduction to Ethics (4) (See Note 1)
   - PHIL 260 Contemporary Ethical Problems (4) (See Note 1)
   - RELG 241 Old Testament Literature (4)
   - RELG 242 New Testament Literature (4)
   - RELG 250 Religions of East Asia (4)

**NOTE:**

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

### SECONDARY EDUCATION, A.A.

Curriculum Code: 0752

1. Complete POLS 120 and SOCL 120 to satisfy the Section II Social Science MACRAO requirement.

2. Complete the following required courses (12 credits):
   - EDUC 201 Teacher Education Practicum (2)
   - EDUC 220 Introduction to Education (3)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 205 Human Growth and Development (3)

3. Complete a minimum of 13 credits from the list of Limited Choice Electives numbered 120 or higher at the end of the concentration listings in the subject area in which you plan to teach.

### SOCIAL SCIENCE, A.A.

Curriculum Code: 0121

1. Complete SOCL 120 to satisfy the Section I Global Perspectives and Diversity Core Area requirement.

2. Complete POLS 120 or 121 to satisfy additional Section II Social Sciences MACRAO requirements.

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

4. Complete one course from two of the following choices (A, B, C, D, E) (6 credits):
   - A. ECON 202 Principles of Economics-Macro (3)
     - ECON 260 Comparative Economic Systems (3)
   - B. GEOG 120 Introduction to Geography (3)
     - GEOG 121 Physical Geography (3)
     - GEOG 202 Geography of North America (3)
   - C. POLS 240 Introduction to Public Policy (3)
     - POLS 250 US Political Parties/Elections (3)
     - POLS 260 Comparative Political Systems (3)
     - POLS 270 International Relations (3)
   - D. EDJC 204 Educational Psychology (3)
     - PSYC 202 Psychology of Personality (3)
     - PSYC 203 Social Psychology (3)
     - PSYC 205 Human Growth and Development (3)
     - PSYC 221 Child Psychology (3)
     - PSYC 222 Adolescent Psychology (3)
     - PSYC 250 Abnormal Psychology (3)
   - E. ANTH 270 Cultural Anthropology (3)
     - ANTH 271 Medical Anthropology (3)
     - ANTH 275 Physical Anthropology (3)
     - ANTH 276 World Archaeology (3)
     - SOCL 180 Introduction to Latino Studies (3)
     - SOCL 185 Intro to African-American Study (3)
     - SOCL 254 Marriage and Family (3)
     - SOCL 266 Contemporary Social Problems (3)
     - SOCL 269 Race and Ethnicity (3)

5. 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.
SOCILOGY, A.A.  

1. Complete SOC1 120 to satisfy the Section I Global Perspectives and Diversity Core Area requirement.

2. Complete POLS 120 to satisfy additional Section II Social Science MACRAO requirements.

3. Complete the following required courses (9 credits):
   - ANTH 271 Cultural Anthropology (3)
   - ANTH 275 Physical Anthropology (3)
   - ANTH 276 World Archaeology (3)
   - GEOG 200 World Regional Geography (4)
   - GEOG 203 Economic Geography (3)
   - SOCL 180 Introduction to Latino Studies (3)
   - SOCL 185 Introduction to African-American Study (3)
   - SOCL 250 Introduction to Japanese Culture (3)

4. Complete a minimum of 18 credits with a minimum of one course from each section below:
   - A. ANTH 271 Medical Anthropology (3)
   - ANTH 275 Physical Anthropology (3)
   - ANTH 276 World Archaeology (3)
   - GEOG 200 World Regional Geography (4)
   - GEOG 203 Economic Geography (3)
   - SOCL 180 Introduction to Latino Studies (3)
   - SOCL 185 Introduction to African-American Study (3)
   - SOCL 250 Introduction to Japanese Culture (3)
   - B. ECON 126 Power, Authority and Exchange (4)
   - ECON 211 Principles of Economics-Micro (3)
   - ECON 202 Principles of Economics-Macro (3)
   - ECON 260 Comparative Economic Systems (3)
   - POLS 250 US Political Parties/Elections (3)
   - POLS 250 Comparative Political Systems (3)
   - SOCL 254 Marriage and Family (3)
   - C. CJUS 102 Crime Causes and Conditions (3)
   - GERD 100 Introduction to Aging (3)
   - PSYC 203 Introduction to Psychology (4)
   - PSYC 203 Social Psychology (3)
   - STAT 170 Introduction to Statistics (3)

SPEECH COMMUNICATION, A.A.  

1. Complete SPCH 120 and SOC1 120 to satisfy Section I Communication Core Area and Global Perspectives and Diversity Core Area requirements.

2. Complete the following required courses (6 credits):
   - SPCH 130 Fundamentals of Public Speaking (3)
   - SPCH 146 Interpersonal Communication (3)
   - SPCH 268 Intercultural Communication (3)

3. Complete a minimum of 6 credits from the following:
   - SPCH 110 Oral Communication in the Workplace (3)
   - SPCH 260 Nonverbal Communication (3)
   - SPCH 270 Mass Communication (3)

4. Complete a minimum of 10 credits from the following:
   - (Note: Students who select foreign language courses are encouraged to take both first-year courses (121 and 122) in the language of their choice.)
   - ANTH 270 Cultural Anthropology (3)
   - CPSC 120 Introduction to Computers (3)
   - LING 203 Introduction to Linguistics (3)
   - PHIL 151 Intro: Logic & Critical Think (4)
   - POLS 250 Comparative Political Systems (3)
   - PSYC 200 Introduction to Psychology (4)
   - Any foreign language with course numbers 121, 122, 211, or 202 (4)

LIMITED CHOICE ELECTIVES FOR ASSOCIATE IN ARTS DEGREE

Some concentrations include limited choice electives. Those limited choice electives must be selected from the following list. Not all courses on this list transfer to all colleges.

1. Courses numbered 120 to 294 with any of the course codes listed below:
   - ANTH
   - ENGL
   - HONR
   - MATH
   - PSYC
   - SPCH
   - ASTR
   - BIOL
   - CHEM
   - CPSC
   - ECON
   - GEOG
   - HUMS
   - JPN
   - PHYS
   - FREN
   - HIST
   - ISCI
   - JURL
   - MUSC
   - JPN
   - PHIL
   - RELG
   - PFRN
   - STAT
   - SOC1
   - SPWH
   - VIEI

2. Courses on the list below:
   - ACCG 210, 211, 220, 221, 230, 231, 240, 241, 250, 271, 280, 290
   - BUSN 111, 201, 202, 205, 209
   - CHDV 101, 111, 112, 113, 120, 121, 138, 149, 220, 221
   - CJS 114, 130, 170, 180, 204, 230, 231, 235, 234, 250, 251, 253, 260, 261, 270, 280, 281, 283
   - CJUS 101, 102, 103, 120, 131, 134, 135, 201, 203, 204, 205, 250, 251, 255, 256
   - DANC 101, 102, 103, 104, 201, 202, 203, 201
   - EMA S 100
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   - GMN 115, 116
   - HSE 100, 101, 240, 245
   - IM 101, 111
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   - MGMT 224, 225, 226, 234
   - MKTG 212, 220, 222, 221, 229
   - MUSC 101, 102, 103, 119
   - PFRN 101, 123, 130, 135, 163, 190
   - PFRN 135, 136
   - SIGN 101, 102, 163, 164
   - SOWK 101
   - SPAN 115, 116

3. A maximum of two credit hours from courses with any of the course codes listed below:
   - PFAO, PFFT, PFSF
   - PHDA, PHHC, PFFT

50  LANSING COMMUNITY COLLEGE CATALOG 2003–2005
GENERAL ASSOCIATE DEGREE
Curriculum Code: 0663

(EFFECTIVE FALL 2003–SUMMER 2005)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The requirements for this program of study are outlined below. Prior to beginning this program, students should meet with an academic advisor or counselor in the Counseling and Advising Center (Suite 2000 of the GVT building, telephone number: 482-480-1984).

REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 60 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHOICE 1: General Education Core Areas</td>
</tr>
</tbody>
</table>

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area
- Global Perspectives and Diversity Core Area
- Mathematics Core Area
- Science Core Area
- Writing Core Area

Customized Options (Choose One Option - See Note 1) 40-44 Credits

- Option A
  - Credits in a Selected Area of Study 12
  - Elective Credits 28-32

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

MINIMUM TOTAL 60

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

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

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AAA Associate Degree Applied Arts
AS Associate Degree Applied Science
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CC Certificate of Completion
ACCOUNTING

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0162 (Effective Fall 2003 - Summer 2005)

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 type 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Business Department, Old Central Building, Room 210, telephone number (517) 432-1522.

REQUIREMENTS

TOTAL: 31 CREDITS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 230</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 240</td>
<td>Federal Income Tax I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 250</td>
<td>Accounting Systems</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Basic Law I</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 33-38 CREDITS

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

CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>4-6</td>
</tr>
<tr>
<td>Writing Core Area</td>
<td>3-4</td>
</tr>
</tbody>
</table>

CHOICE 2: Accounting Specialty Area

11-12 Credits

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 160</td>
<td>Payroll Systems and Taxes</td>
</tr>
<tr>
<td>ACCT 201</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>ACCT 235</td>
<td>Budgeting</td>
</tr>
<tr>
<td>ACCT 241</td>
<td>Federal Income Tax II</td>
</tr>
<tr>
<td>ACCT 250</td>
<td>Advanced Accounting</td>
</tr>
<tr>
<td>ACCT 280</td>
<td>Governmental Accounting</td>
</tr>
<tr>
<td>ACCT 290</td>
<td>Auditing</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 245</td>
<td>Accounting Internship</td>
</tr>
<tr>
<td>ACCT 271</td>
<td>Principles of Finance</td>
</tr>
<tr>
<td>INSU 265</td>
<td>Principles Risk and Insurance</td>
</tr>
<tr>
<td>LEGL 219</td>
<td>Admin Law I (for Acct Majors)</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

64

NOTES:
1. Students may also select from undeclared 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 ACCT prefix.

SUGGESTED COURSE SEQUENCE

Students should use course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (or, who, part-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>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 230</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 240</td>
<td>Federal Income Tax I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 250</td>
<td>Accounting Systems</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Basic Law I</td>
<td>3</td>
</tr>
</tbody>
</table>

ACCOUNTING

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0714 (Effective Fall 2003 - Summer 2005)

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

REQUIREMENTS

TOTAL: 17 CREDITS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 160</td>
<td>Payroll Systems and Taxes</td>
<td>2</td>
</tr>
<tr>
<td>ACCT 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 250</td>
<td>Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Accounting Information Systems Mgmt I</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 11-13 CREDITS

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

CHOICE 1: Accounting Specialty

3-4 Credits

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 140</td>
<td>Income Tax Preparation</td>
</tr>
<tr>
<td>ACCT 235</td>
<td>Budgeting</td>
</tr>
</tbody>
</table>

CHOICE 2: Word Processing

3 Credits

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AABS 119</td>
<td>Microsoft Word</td>
</tr>
<tr>
<td>IABS 219</td>
<td>Advanced Microsoft Word</td>
</tr>
</tbody>
</table>

CHOICE 3: Office Skills

3 Credits

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
</tr>
</tbody>
</table>

CHOICE 4: Written Communication

4 Credits

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
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</table>

ELECTIVES

TOTAL: 2 CREDITS

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

MINIMUM TOTAL

30

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ACCT 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
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<tr>
<td>OADM 215</td>
<td>Accounting Information Systems Mgmt I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Accounting Information Systems Mgmt I</td>
<td>2</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
<td>2</td>
</tr>
</tbody>
</table>
ACCOUNTING, CPA EXAM PREP
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0255 (Effective Fall 2003 - Summer 2008)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Business Department, Old Central Building, Room 210, telephone number (517) 489-1522.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</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 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 250</td>
<td>Cost Accounting</td>
<td>4</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 260</td>
<td>Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 280</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 219</td>
<td>Adv Bus Law for Acct Majors</td>
<td>4</td>
</tr>
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</table>

TOTAL: 42 CREDITS

LIMTED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>16-20 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>4-5</td>
</tr>
<tr>
<td>Writing Core Area</td>
<td>3-4</td>
</tr>
</tbody>
</table>

| CHOICE 2: Governmental/Fund Accounting | 4 Credits |
| ACCG 250 | Advanced Accounting               | 4            |
| ACCG 280 | Governmental Accounting           | 4            |

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>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>ACCG 210</td>
<td>ACCG 211</td>
<td>ACCG 220</td>
<td>ACCG 221</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>ACCG 260</td>
<td>ACCG 230</td>
<td>ACCG 241</td>
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<tr>
<td>Lim.Ch.</td>
<td>LEGL 219</td>
<td>ACCG 240</td>
<td>ACCG 250</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

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

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

Associate in Applied Science Degree

Curriculum Code: 0895 (Effective Fall 2003 - Summer 2008)

This program prepares students for positions in specific agricultural management, sustainable development, and related technological applications in today's agribusiness. Students can complete the program in two years. The National Science Foundation has selected this program as a national model curriculum. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

Requirements

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

Information

Contact the Manufacturing and Land Technologies Department, Gannon Vocational Technical Center, Room 1380, telephone number (517) 483-1336.

Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 101</td>
<td>Principles/Precision Agritech</td>
<td>2</td>
</tr>
<tr>
<td>AGRI 106</td>
<td>Disease/Insect Agronomic Crops</td>
<td>2</td>
</tr>
<tr>
<td>AGRI 200</td>
<td>Vegetation and Weed Management</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 201</td>
<td>Prin/Sustainable Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 202</td>
<td>Agri Soils and Crop Management</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 211</td>
<td>Agricultural Crop Production</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 212</td>
<td>Vegetable Crop Production</td>
<td>3</td>
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<td>AGRI 213</td>
<td>Ag Site Specific Research Tech</td>
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<td>BIOL 120</td>
<td>Environmental Science</td>
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<tr>
<td>GRET 205</td>
<td>Principles/Geographic Info Sys</td>
<td>3</td>
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<tr>
<td>GRET 210</td>
<td>Global Positioning Systems</td>
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</tr>
<tr>
<td>GRET 240</td>
<td>Cartography in GIS</td>
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</tr>
<tr>
<td>GRET 241</td>
<td>Remote Sens/Intagio Internet</td>
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</tr>
<tr>
<td>GRET 243</td>
<td>ORACLE/Geographic Info Sys</td>
<td>3</td>
</tr>
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<td>GRET 250</td>
<td>Basics of ARC/Info</td>
<td>3</td>
</tr>
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<td>GRET 255</td>
<td>Beginning ARC/Info</td>
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<tr>
<td>GRET 258</td>
<td>ARC/View Extensions G.I.S.</td>
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<tr>
<td>HORT 102</td>
<td>Intro Ornamental Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>LAND 262</td>
<td>Computer Draft/Dsgn Land Arch</td>
<td>3</td>
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<tr>
<td>MATH 234</td>
<td>Diversity in the Workplace</td>
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<td>MGMT 210</td>
<td>Investigations with Matt</td>
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<td>SPCI 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Limited Choice Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

Total: 6 Credits

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

Choice 1: General Education Core Areas (0 Credits)

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

Communication Core Area (See Note 1) 0
Global Perspectives and Diversity Core Area (See Note 1) 0
Mathematics Core Area (See Note 1) 0
Science Core Area (See Note 1) 0
Writing Core Area (See Note 1) 0

Minimum Total: 68

Notes:

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

Recommended Course Sequence

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 101</td>
<td>Principles/Precision Agritech</td>
</tr>
<tr>
<td>AGRI 106</td>
<td>Disease/Insect Agronomic Crops</td>
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<tr>
<td>AGRI 200</td>
<td>Vegetation and Weed Management</td>
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<tr>
<td>AGRI 201</td>
<td>Prin/Sustainable Agriculture</td>
</tr>
<tr>
<td>AGRI 202</td>
<td>Agri Soils and Crop Management</td>
</tr>
<tr>
<td>GRET 205</td>
<td>Principles/Geographic Info Sys</td>
</tr>
<tr>
<td>GRET 210</td>
<td>Global Positioning Systems</td>
</tr>
<tr>
<td>GRET 220</td>
<td>Basics of ARC/View</td>
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<tr>
<td>GRET 225</td>
<td>Beginning ARC/Info</td>
</tr>
<tr>
<td>HORT 102</td>
<td>Intro Ornamental Horticulture</td>
</tr>
<tr>
<td>LAND 262</td>
<td>Computer Draft/Dsgn Land Arch</td>
</tr>
</tbody>
</table>

Minimum Total: 34

Recommended Course Sequence

Students completing this certificate will be prepared for entry-level positions in precision agriculture and sustainable development, and its various application areas in the agricultural industry. Positions as pest scouts, custom applicators, technology resource technicians, and crop advisory specialists are a few of the positions available. This certificate provides basic computer skills as well as background and hands-on experience in GIS and GPS technologies.
ARCH TECH, RESIDENTIAL DESIGN
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0758 (Effective Fall 2003 - Summer 2008)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 1360, telephone number (517) 483-1396.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
<th>HOURS</th>
</tr>
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<tbody>
<tr>
<td>ARCH 100</td>
<td>Intro to Architecture Drawing (See Note 1)</td>
<td>3</td>
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<td>ARCH 101</td>
<td>Residential Detailing</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ARCH 102</td>
<td>Residential Drawing</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARCH 128</td>
<td>Residential Design</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ARCH 271</td>
<td>Structural Theory</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ARTS 102</td>
<td>Design &amp; Communication</td>
<td>3</td>
<td></td>
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<td>BLDT 251</td>
<td>MI Residential &amp; Bldg Codes</td>
<td>3</td>
<td></td>
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<tr>
<td>LAND 132</td>
<td>Residential Landscaping</td>
<td>2</td>
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<tr>
<td>MATH 119</td>
<td>Investigations Math</td>
<td>3</td>
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<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
<td></td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
<td></td>
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</tbody>
</table>

TOTAL: 41 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

0 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

Core Area: Communication Core Area (See Note 2)
Global Perspectives and Diversity Core Area (See Note 2)
Mathematics Core Area (See Note 2)
Science Core Area (See Note 2)
Writing Core Area (See Note 2)

CHOICE 2: Computer Graphics

8-10 Credits

ARCH 221 Architectural DataCAD I
ARCH 222 Architectural DataCAD II
ARCH 225 Arch DataCAD Independent Study
ARCH 231 Architectural AutoCAD I
ARCH 232 Architectural AutoCAD II
ARCH 235 Arch AutoCAD Independent Study
ARCH 237 Arch Computer Rendering

CHOICE 3: Building Trades

7-8 Credits

BLDT 100 Introduction to Construction
BLDT 121 Residential Framing
BLDT 277 Construction Cost Estimating

CHOICE 4: Materials Structures and Systems

7-8 Credits

ARCH 273 Environmental Systems
ARCH 276 Alternative Structures
ARCH 278 Building Science
ARCH 280 Materials of Construction

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>ARCH 100</td>
<td>ARCH 101</td>
<td>ARCH 128</td>
<td>ARCH 102</td>
</tr>
<tr>
<td>ARTS 102</td>
<td>ARCH 121</td>
<td>BLDT 281</td>
<td>ARCH 271</td>
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<td>WRT 124</td>
<td>MATH 119</td>
<td>PHYS 120</td>
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<td>Lim. Ch.</td>
<td>Curso Ch.</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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<tr>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
ARCH TECH, RESIDENTIAL DESIGN
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0631 (Effective Fall 2003 - Summer 2006)

This certificate program consists of practical hands-on courses that concentrate on single-family and multi-family residential design. This program provides students with the necessary technical knowledge for the design and preparation of residential working drawings, including: residential design theory, construction materials and techniques, residential interiors, presentation drawing techniques, and computer graphics.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocational Technical Center, Room 1381, telephone number (517) 469-1596.

REQUIREMENTS

<table>
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<th>TOTAL CREDIT HOURS</th>
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<tr>
<td>ARCH 100</td>
<td>Intro to Architecture Design (See Note 1) 4</td>
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<tr>
<td>ARCH 101</td>
<td>Residential Detailing 4</td>
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<td>ARCH 102</td>
<td>Residential Drawing 4</td>
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<td>ARCH 121</td>
<td>Visual Communication I 3</td>
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<tr>
<td>ARCH 126</td>
<td>Residential Design 2</td>
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<tr>
<td>ARCH 278</td>
<td>Building Science 4</td>
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<td>BLDT 281</td>
<td>Mt Residential &amp; Bldg Codes 3</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:**
- Computer Graphics 6 Credits
- ARCH 221 Architectural Design I 4
- ARCH 222 Architectural Design II 4
- ARCH 231 Architectural AutoCAD I 4
- ARCH 232 Architectural AutoCAD II 4

**CHOICE 2:**
- Materials, Structures, and Systems 3-4 Credits
- ARCH 271 Structural Analysis 4
- ARCH 273 Environmental Systems 4
- ARCH 276 Alternative Structures 3
- ARCH 283 Materials of Construction 4

**CHOICE 3:**
- Interior Design 4 Credits
- INTR 131 Computer-Aided Kitchen Design 4
- INTR 190 Interior Materials/Equipment 4

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

**MINIMUM TOTAL** 41

NOTES:
1. If students have more than a year of high school drafting or equivalent work experience, see an advisor in the Construction and Maintenance Technologies Department to see if ARCH 100 can be waived.
2. CHOICE 4 allows for completion of courses which relate to specific career preparation for the field of residential design and have not been stipulated in any of the above categories. Students should consult with a program advisor for specific course options.

SUGGESTED COURSE SEQUENCE

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

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<tr>
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<td>ARCH 100</td>
<td>ARCH 101</td>
<td>ARCH 102</td>
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<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.1</td>
<td>Lim.Ch.4</td>
</tr>
</tbody>
</table>
**ARCHITECTURAL TECHNOLOGY**

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0233 (Effective Fall 2003 - Summer 2006)

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

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Construction and Maintenance Technologies Department, Gannon Vocational Technical Center, Room 1360, telephone number (517) 483-1356.

**REQUIREMENTS**

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</thead>
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<tr>
<td>ARCH 100</td>
<td>Intro to Architecture Drawing (See Note 1)</td>
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</tr>
<tr>
<td>ARCH 101</td>
<td>Residential Detailing</td>
<td>3</td>
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<tr>
<td>ARCH 102</td>
<td>Residential Drawing</td>
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</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 201</td>
<td>Commercial Design</td>
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<td>ARCH 202</td>
<td>Commercial Drawing</td>
<td>4</td>
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<td>ARCH 211</td>
<td>Design Studio</td>
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<td>ARCH 271</td>
<td>Structural Theory</td>
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<td>Design &amp; Communication</td>
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<td>MI Residential &amp; Bidg Codes</td>
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<td>MATH 119</td>
<td>Investigations with Math</td>
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<td>QADM 275</td>
<td>Cultural Differences in Business</td>
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<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>WNT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:** General Education Core Areas  
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 2) 0
- Global Perspectives and Diversity Core Area (See Note 2) 0
- Mathematics Core Area (See Note 2) 0
- Science Core Area (See Note 2) 0
- Writing Core Area (See Note 2) 0

**CHOICE 2:** Computer Graphics  
(8-10 Credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 221</td>
<td>Architectural DataCAD I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 222</td>
<td>Architectural DataCAD II</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 229</td>
<td>Arch DataCAD Independent Study</td>
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</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>Arch AutoCAD Independent Study</td>
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<tr>
<td>ARCH 237</td>
<td>Arch Computer Rendering</td>
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</table>

**CHOICE 3:** Materials, Structures and Systems  
(7-8 Credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
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<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>Building Sciences</td>
<td>4</td>
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<tr>
<td>ARCH 283</td>
<td>Materials of Construction</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL:** 67

**NOTES:**

1. Students having more than one year of high school drafting or equivalent work experience should see an advisor in the Construction and Maintenance Technologies Department to see if ARCH 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.

**CHOICE 4:** History and Preservation  
(5 Credits)

<table>
<thead>
<tr>
<th>Code</th>
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<th>Hours</th>
</tr>
</thead>
<tbody>
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<td>3</td>
</tr>
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<td>ARCH 142</td>
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<tr>
<td>ARCH 146</td>
<td>Presrv/Adaptive Reuse Architac</td>
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**TOTAL:** 69

**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**
ART, DESIGN, AND MULTIMEDIA

COMPUTER GRAPHICS ANIMATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0294 (Effective Fall 2003 - Summer 2006)

A computer animator is an artist who designs for video and film and uses a computer as a primary tool. Animators must have creative abilities and design, drawing, problem-solving, production, communication, and presentation skills. Computer animators are employed in advertising, video production, the motion picture industry (special effects to full cartoon features), and in the growing multimedia industry, creating games, training materials, and presentations. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 485-1476.

REQUIREMENTS

<table>
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<tr>
<td>ARTS 133</td>
<td>Surface Anatomy for Artists</td>
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<td>ARTS 151</td>
<td>Computer Graphics/Illustration</td>
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<td>ARTS 171</td>
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<td>ARTS 225</td>
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<td>ARTS 226</td>
<td>Storyboards</td>
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<td>ARTS 228</td>
<td>Advanced Digital Imaging</td>
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<td>ARTS 232</td>
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<td>FILM 118</td>
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<td>MATH 118</td>
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LIMITED CHOICE REQUIREMENTS

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<td>ARTS 269</td>
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</table>

TOTAL: 68 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>PHYS 120</td>
<td>MATH 118</td>
<td>Lim.Ch.</td>
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</table>

X

ARTS 225
ARTS 226
ARTS 228
ARTS 229
ARTS 269
ARTS 281

NOTES:

1. MATH 118 is the minimum Math requirement to meet the General Education Core Math requirement for this curriculum. Students wishing to transfer to a four-year college should see an Art, Design & Multimedia Program advisor for appropriate Math Core selections.

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

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

Curriculum Code: 0194 (Effective Fall 2003 - Summer 2006)

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

**INFORMATION**

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

**REQUIREMENTS**

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<td>ARTS 162</td>
<td>Typography</td>
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<td>ARTS 228</td>
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**LIMITED CHOICE REQUIREMENTS**

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<td>Science Core Area</td>
<td>(See Note 2)</td>
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**MINIMUM TOTAL**

72

**SUGGESTED COURSE SEQUENCE**

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

<table>
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<th>I</th>
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<td>ARTS 102</td>
<td>ARTS 132</td>
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<td>ARTS 229</td>
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<td>ARTS 131</td>
<td>ARTS 151</td>
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<td>ARTS 171</td>
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<td>PHYS 120</td>
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**COMPUTER GRAPHICS, MULTIMEDIA CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0857 (Effective Fall 2003 - Summer 2006)

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

**REQUIREMENTS**

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<td>ARTS 281</td>
<td>ARTS 281</td>
<td>Art Internship</td>
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**MINIMUM TOTAL**

40

**NOTES:**

1. It is recommended that all students entering the curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 103 Seminars - Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.

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

**SUGGESTED COURSE SEQUENCE**

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

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<td>ARTS 195</td>
<td>ARTS 232</td>
<td>ARTS 237</td>
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COMPUTER GRAPHICS, WEB DESIGN
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0914 (Effective Fall 2003 - Summer 2006)

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

PREREQUISITES
Students should see the Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1475.

REQUIREMENTS

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</tr>
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<td>ARTS 236</td>
<td>Computer Graphics/Production</td>
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<td>CISB 137</td>
<td>Introduction to Oracle: SQL</td>
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<td>CISB 203</td>
<td>Developing Pages for the Web</td>
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<td>CISB 254</td>
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<td>PHYS 120</td>
<td>The Art of Physics</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core
6-8 Credits

[See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.]

Communication Core Area (See Note 2) 0
Global Perspectives and Diversity Core Area 3-4
Mathematics Core Area (See Note 2) 0
Science Core Area (See Note 2) 0
Writing Core Area 3-4

MINIMUM TOTAL 72

NOTES:
1. MATH 118 is the minimum Math requirement to meet the General Education Core Math requirement for this curriculum. Students wishing to transfer to a four-year college should see an Art, Design and Multimedia Program Advisor for appropriate Math Core selections.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

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

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<td>Lim.Ch.</td>
<td>CISB 119</td>
<td>Lim.Ch.</td>
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ARTS 236
ARTS 237
ARTS 269
ARTS 281

62 | LANSING COMMUNITY COLLEGE CATALOG 2003-2005
FINE ART FOUNDATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0271 (Effective Fall 2003 - Summer 2005)

This curriculum is designed for artists who wish to expand their creative horizons or refine their artistic style. The emphasis is on the exploration of an artist's abilities through the use of traditional materials and techniques. Painting, drawing, printmaking, and watercolor are fine arts Arts. A career in fine arts requires dedication, discipline, and sacrifice. Success can come slowly in this visual art, and most artists do their best work after years of experience. Fine artists are self-employed professionals who sell their work through artists representatives, galleries, art fairs, and juried exhibitions. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

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<td>ARTS 123 Surface Anatomy for Artists</td>
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<td>ARTS 124 Figure Sculpture</td>
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<td>ARTS 140 Printmaking I</td>
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<td>ARTS 145 Screen Printing I</td>
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<td>ARTS 200 Painting I</td>
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LIMITED CHOICE REQUIREMENTS: TOTAL: 27-30 CREDITS

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

CHOICE 1: General Education Core Areas 10-13 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

1. Communication Core Area (See Note 2) 0
2. Global Perspectives and Diversity Core Area (See Note 2) 0
3. Mathematics Core Area 3-4
4. Science Core Area 4-5
5. Writing Core Area 3-4

CHOICE 2: Art 17 Credits

- ARTS 110 Special Topics in Fine Arts 1
- ARTS 114 Oriental Watercolor 2
- ARTS 123 Figure Drawing (See Note 1) 3
- ARTS 137 Perspective Drawing 2
- ARTS 141 Printmaking II 4
- ARTS 149 Screen Printing II 4
- ARTS 151 Computer Graphics/Illustration 3
- ARTS 171 Computer Graphics/Video Imag 3
- ARTS 195 Employ/Gen Issues for Artists 1
- ARTS 201 Painting II 4
- ARTS 202 Figure Painting 4
- ARTS 203 Watercolor II 4
- ARTS 204 Advanced Watercolor 4
- ARTS 211 Airbrush Techniques I 4
- ARTS 267 Advanced Drawing 3

MINIMUM TOTAL: 71

NOTES:
1. ARTS 122 must be taken once toward the requirements for this degree and may also be taken one more time toward Choice 2 requirements for a total of four credits.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

CURRICULUM STUDIES CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0800 (Effective Fall 2003 - Summer 2005)

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 36 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102 Design and Communication</td>
</tr>
<tr>
<td>ARTS 103 3-Dimensional Design</td>
</tr>
<tr>
<td>ARTS 131 Drawing I</td>
</tr>
<tr>
<td>ARTS 140 Printmaking I</td>
</tr>
<tr>
<td>ARTS 145 Screen Printing I</td>
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<tr>
<td>ARTS 150 Matte and Frame Techniques</td>
</tr>
<tr>
<td>ARTS 200 Painting I</td>
</tr>
<tr>
<td>ARTS 204 Watercolor I</td>
</tr>
<tr>
<td>HUMS 211 History of Art I</td>
</tr>
<tr>
<td>HUMS 212 History of Art II</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS: TOTAL: 6-8 CREDITS

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

CHOICE 1: Art 6-8 Credits

- ARTS 110 Special Topics in Fine Arts 1
- ARTS 140 Printmaking I 4
- ARTS 141 Printmaking II 4
- ARTS 145 Screen Printing I 4
- ARTS 146 Screen Printing II 4
- ARTS 151 Computer Graphics/Illustration 3
- ARTS 202 Figure Painting 4
- ARTS 204 Watercolor I 4
- ARTS 205 Watercolor II 4
- ARTS 206 Advanced Watercolor 4
- ARTS 216 Humorous Illustration I 3
- ARTS 267 Advanced Drawing 3

MINIMUM TOTAL: 40

NOTES:
1. ARTS 122 must be taken twice for a total of 6 credits.
2. ARTS 203 must be taken once toward the requirements for this certificate, and may also be taken up to two additional times toward Choice 1 requirements for a total of 12 credits.

SUGGESTED COURSE SEQUENCE

| ARTS 102 | ARTS 103 | ARTS 135 | ARTS 190 |
| ARTS 131 | ARTS 132 | ARTS 234 | Lim.Ch.1 |
| ARTS 140 | ARTS 133 | HUMS 212 | Lim.Ch.2 |
| ARTS 145 | ARTS 200 | Lim.Ch.1 | Lim.Ch.2 |
| Lim.Ch.1 | HUMS 211 | Lim.Ch.2 |

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ART, DESIGN, AND MULTIMEDIA

GRAPHIC DESIGN
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 9219 (Effective Fall 2003 - Summer 2006)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

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<td>ARTS 131</td>
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<td>3</td>
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<td>ARTS 132</td>
<td>Drawing II</td>
<td>3</td>
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<tr>
<td>ARTS 162</td>
<td>Typography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics/Digital Imag</td>
<td>3</td>
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<tr>
<td>ARTS 173</td>
<td>Computer Graphics/Web Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 175</td>
<td>Electronic Design</td>
<td>3</td>
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<tr>
<td>ARTS 193</td>
<td>Employment Issues for Artists</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 202</td>
<td>Advanced Digital Imaging</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 251</td>
<td>Graphic Design I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 252</td>
<td>Graphic Design II</td>
<td>4</td>
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<tr>
<td>ARTS 253</td>
<td>Graphic Design III</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 257</td>
<td>Computer Graphics Preprod Tech</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 269</td>
<td>The Portfolio</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 281</td>
<td>Art Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 313</td>
<td>Intro Electronic Page Layout</td>
<td>1</td>
</tr>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
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<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
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<tr>
<td>MATH 118</td>
<td>The Art of Geometry (See Note 1)</td>
<td>3</td>
</tr>
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<td>MKTG 140</td>
<td>Introduction to Advertising</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 9-12 CREDITS</th>
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</table>

1. General Education Core Areas 
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Core Area</th>
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<tr>
<td>Communication</td>
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<td>Global Perspectives</td>
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<tr>
<td>Diversity Core</td>
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<tr>
<td>Mathematics Core</td>
<td>3</td>
</tr>
<tr>
<td>Business Core</td>
<td>3</td>
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<tr>
<td>Science Core</td>
<td>4.5</td>
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<tr>
<td>Writing Core</td>
<td>3.5</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

70

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<th>IV</th>
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<tr>
<td>ARTS 102</td>
<td>ARTS 131</td>
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<td>ARTS 175</td>
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<td>ARTS 182</td>
<td>ARTS 173</td>
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</tr>
<tr>
<td>ARTS 202</td>
<td>ARTS 202</td>
<td>MKTG 140</td>
<td>ARTS 251</td>
</tr>
</tbody>
</table>

GRAPHC DESIGN
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1020 (Effective Fall 2003 - Summer 2006)

This certificate is designed for students who hold a post secondary degree (A.A., B.S., B.F.A., or M.F.A.) in the visual arts and wish to acquire or enhance their graphic design skills to prepare for employment.

REQUIREMENTS

<table>
<thead>
<tr>
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<td>ARTS 182</td>
<td>Typography (See Note 1)</td>
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<td>ARTS 171</td>
<td>CG/Digital Imaging (See Note 1)</td>
<td>3</td>
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<tr>
<td>ARTS 175</td>
<td>Computer Graphics/Web Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 175</td>
<td>Electronic Design (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 193</td>
<td>Employment Issues for Artists</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 228</td>
<td>Advanced Digital Imaging</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 251</td>
<td>Graphic Design I</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 252</td>
<td>Graphic Design II</td>
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<td>ARTS 253</td>
<td>Graphic Design III</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 257</td>
<td>Computer Graphics Preprod Tech</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 259</td>
<td>The Portfolio</td>
<td>3</td>
</tr>
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<td>ARTS 281</td>
<td>Art Internship</td>
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</tr>
<tr>
<td>MKTG 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
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</tbody>
</table>

MINIMUM TOTAL

40

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

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
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<tr>
<td>ARTS 182</td>
<td>ARTS 173</td>
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<td>ARTS 171</td>
<td>ARTS 175</td>
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<td>ARTS 202</td>
<td>MKTG 140</td>
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<tr>
<td>ARTS 269</td>
<td>ARTS 281</td>
<td>ARTS 251</td>
<td>ARTS 257</td>
</tr>
</tbody>
</table>
HUMOROUS ILLUSTRATION
CERTIFICATE OF COMPLETION

Curriculum Code: 8838 (Effective Fall 2003 - Summer 2006)

This certificate of completion program consists of practical hands-on courses that provide students with the necessary technical knowledge and skills needed to create humorous illustrations, cartooning, and caricatures. Additional education enhances an individual's employment opportunities.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<td>ARTS 102</td>
<td>Design &amp; Communication</td>
<td>3</td>
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<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Figure Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 216</td>
<td>Humorous Illustration I</td>
<td>3</td>
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<tr>
<td>ARTS 217</td>
<td>Humorous Illustration II</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 225</td>
<td>Comic Book Illustration</td>
<td>3</td>
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</tbody>
</table>

TOTAL: 18 CREDITS

MINIMUM TOTAL: 18

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

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>ARTS 131</td>
<td>ARTS 132</td>
<td>ARTS 216</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>ARTS 216</td>
<td>ARTS 217</td>
<td>ARTS 225</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion stated in an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
# Sequential Art Associate in Applied Arts Degree

Curriculum Code: 1047 (Effective Fall 2003 - Summer 2006)

This degree is designed for students who wish to specialize in illustration as it applies to computer graphics, animation, and cartoon, comic book, or self-publishing. Career options for sequential artists include storyboarding and conceptual artist for film, television, animation, gaming, and advertising; illustrator for books and other publications; ink/penciler/colorist; comic syndication; and self-publishing. Sequential artists should expect to work as part of a development team that may include animators, film and video producers, graphic designers, or video game developers. Sequential artists also have many opportunities for freelance work. **Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.**

## Prerequisites

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

## Information

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1475.

### Requirements

(See Note 1)

<table>
<thead>
<tr>
<th>Code</th>
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<td>CREDIT HOURS</td>
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<tr>
<td>ARTS 102</td>
<td>Design &amp; Communication</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Figure Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 133</td>
<td>Surface Anatomy for Artists</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Perspective Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 151</td>
<td>Computer Graphics/Illustration</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 153</td>
<td>Conceptual Illustration</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics/Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employ/Health Issues for Artists</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 216</td>
<td>Humorous Illustration</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 217</td>
<td>Humorous Illustration II</td>
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<tr>
<td>ARTS 225</td>
<td>Comic Book Illustration</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 226</td>
<td>Storyboards</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 228</td>
<td>Advanced Digital Imaging</td>
<td>3</td>
</tr>
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<td>ARTS 298</td>
<td>Comps and Animation</td>
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</tr>
<tr>
<td>ARTS 267</td>
<td>Advanced Drawing</td>
<td>3</td>
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<tr>
<td>ARTS 269</td>
<td>The Portfolio (See Note 2)</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 281</td>
<td>Art Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

### Limited Choice Requirements

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Choice</th>
<th>General Education Core Areas</th>
<th>13-17 Credits</th>
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<tbody>
<tr>
<td></td>
<td>Communication Core Area (See Note 3)</td>
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<td></td>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
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<tr>
<td></td>
<td>Mathematics Core Area</td>
<td>3-4</td>
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<td></td>
<td>Science Core Area</td>
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<tr>
<td></td>
<td>Writing Core Area</td>
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</table>

### Choice 2: Animation

<table>
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<tr>
<td>ARTS 232</td>
<td>Comp Graphics 2-D Animation</td>
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<tr>
<td>ARTS 234</td>
<td>Comp Graphics 3-D Animation</td>
<td>4</td>
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<tr>
<td>ARTS 286</td>
<td>Comp Graphics 3-D Animation II</td>
<td>4</td>
</tr>
</tbody>
</table>

### Minimum Total

71

**Notes:**

1. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABIS 102 Seminar - Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.

2. The Portfolio is considered to be the final course in this curriculum. All other courses must be completed or taken concurrently with ARTS 269.

3. 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 classes. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.*

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>ARTS 102</td>
<td>ARTS 132</td>
<td>ARTS 137</td>
<td>ARTS 133</td>
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<td>ARTS 131</td>
<td>ARTS 151</td>
<td>ARTS 216</td>
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<td>ARTS 155</td>
<td>ARTS 159</td>
<td>ARTS 228</td>
<td>ARTS 225</td>
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<td>Lim.Ch.</td>
<td>ARTS 171</td>
<td>Lim.Ch.</td>
<td>ARTS 267</td>
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<td>ARTS 226</td>
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<td>ARTS 228</td>
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<td>ARTS 269</td>
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<td>ARTS 281</td>
<td></td>
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<td>Lim.Ch.</td>
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**Students Are Responsible For Completing All Requirements As Stated. The Only Official Document Of Program Completion Status Is An Audit Conducted By The Registrar's Office That Is Initiated When Student Applies For A Degree Or Certificate. Students Are Expected To Apply For Graduation Prior To The Semester They Intend To Graduate.**

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## Sequential Art Certificate of Achievement

**Curriculum Code:** 1043 (Effective Fall 2003 - Summer 2008)

This certificate is designed to enhance the illustration skills of Computer Graphics and Graphic Design majors and will also appeal to students who wish to build illustration skills for entry-level positions in sequential art. Sequential artists should expect to work as part of a development team that may include animators, film and video producers, graphic designers, or video game developers. Sequential artists also have many opportunities for freelance work.

### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

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

### REQUIREMENTS (See Note 1)

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ARTS 102</td>
<td>Design &amp; Communication</td>
<td>3</td>
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<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
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<td>ARTS 132</td>
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<td>ARTS 133</td>
<td>Surface Anatomy for Artists</td>
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<td>ARTS 137</td>
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<tr>
<td>ARTS 151</td>
<td>Computer Graphics/Illustration</td>
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<td>ARTS 153</td>
<td>Conceptual Illustration</td>
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<td>ARTS 171</td>
<td>Computer Graphics/Digital Imaging</td>
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<td>ARTS 195</td>
<td>Employ/Bus Issues for Artists</td>
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<tr>
<td>ARTS 205</td>
<td>Humorous Illustration I</td>
<td>3</td>
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<tr>
<td>ARTS 207</td>
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<td>ARTS 225</td>
<td>Comic Book Illustration</td>
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<tr>
<td>ARTS 226</td>
<td>Storyboarding</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 267</td>
<td>Advanced Drawing</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL:** 39

### NOTE:

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

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
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<tbody>
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<td>ARTS 132</td>
<td>ARTS 137</td>
<td>ARTS 195</td>
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<td>ARTS 131</td>
<td>ARTS 151</td>
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<td>ARTS 217</td>
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<td></td>
<td>ARTS 226</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>ARTS 267</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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LANSING COMMUNITY COLLEGE CATALOG 2003-2005  67
AUTOMOTIVE

2003-2005 Catalog Lansing Community College

ALTERNATE FUELS
CERTIFICATE OF COMPLETION

Curriculum Code: 0855 (Effective Fall 2003 - Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are trained specifically in the area of alternate fuels and are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at the end of fall and spring semesters in the LCC Automotive Program Office. The Automotive Technology Program is a National Automotive Technicians Education Foundation (NATEF) Certified Training Program, evaluated by the National Institute for Automotive Service Excellence (ASE). The Automotive Technology Program is also a member of the National Alternative Fuels Training Consortium (NAFTC).

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Transportation Technologies Department located at the LCC Aviation Center, 8428 W. Hangar Drive, Lansing, MI 48908, telephone number (517) 267-3768.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>5</td>
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<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 260</td>
<td>Intro to Alternative Fuels</td>
<td>2</td>
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<tr>
<td>AUTO 261</td>
<td>Alternative Fuels - CNG</td>
<td>3</td>
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<tr>
<td>AUTO 262</td>
<td>Alternative Fuels - LPG</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 21 CREDITS

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

SUGGESTED COURSE SEQUENCE

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

AUTO 100  AUTO 225  AUTO 260
AUTO 215  AUTO 261  AUTO 262

AUTO AC/ELECTRICAL ACCESSORIES
CERTIFICATE OF COMPLETION

Curriculum Code: 0846 (Effective Fall 2003 - Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at the end of fall and spring semesters in the LCC Automotive Program Office. The Automotive Technology Program is a National Automotive Technicians Education Foundation (NATEF) Certified Training Program, evaluated by the National Institute for Automotive Service Excellence (ASE).

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Transportation Technologies Department located at the LCC Aviation Center, 8428 W. Hangar Drive, Lansing, MI 48908, telephone number (517) 267-3768.

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<tr>
<td>AUTO 210</td>
<td>Auto Electrical Theory</td>
<td>5</td>
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<td>AUTO 160</td>
<td>Auto Air Conditioning</td>
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</table>

MINIMUM TOTAL: 11 CREDITS

SUGGESTED COURSE SEQUENCE

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

AUTO 100  AUTO 210
AUTO 110

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

Curriculum Code: 0188 (Effective Fall 2003 - Summer 2009)

Auto collision repair technicians possess the necessary skills to perform collision repair and refinishing according to the "manufacturer's specifications." Using hand and power tools, they straighten bent frames and body sections, replace damaged parts, smooth out minor dents and creases, remove rust, fill small holes, and apply painted surfaces. Auto collision repair technicians are employed by collision repair shops, new car dealerships, refinishing businesses, and auto restoration shops. Formal training is highly desirable, because advances in technology in recent years have greatly changed the structure, components, and even the materials used in automobiles. The Auto Collision Repair Program is certified by the National Automotive Technicians Education Foundation (NATEF). Although this curriculum does not provide state certification, state certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites, information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Transportation Technologies Department located at the LCC Aviation Center, 3428 W. Harper Drive, Lansing, MI 48905, telephone number (517) 267-5886.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>AUTO 110</td>
<td>Non-Structural Repair (See Note 1)</td>
</tr>
<tr>
<td>AUTO 112</td>
<td>Advanced Non-Structural Repair</td>
</tr>
<tr>
<td>AUTO 114</td>
<td>Auto Body Welding and Cutting (See Note 1)</td>
</tr>
<tr>
<td>AUTO 116</td>
<td>Auto Body Structural Repair</td>
</tr>
<tr>
<td>AUTO 118</td>
<td>Introduction to Refinishing (See Note 1)</td>
</tr>
<tr>
<td>AUTO 122</td>
<td>Advanced Refinishing</td>
</tr>
<tr>
<td>AUTO 124</td>
<td>Collision Repair Estimating</td>
</tr>
<tr>
<td>AUTO 126</td>
<td>Automotive Plastic Repair</td>
</tr>
<tr>
<td>AUTO 128</td>
<td>Collision Repair Internship (See Notes 1 &amp; 2)</td>
</tr>
<tr>
<td>AUTO 100</td>
<td>Auto Service</td>
</tr>
<tr>
<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
</tr>
<tr>
<td>AUTO 130</td>
<td>Auto Steering &amp; Suspension</td>
</tr>
<tr>
<td>AUTO 150</td>
<td>Auto Heat &amp; Air Conditioning</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas - 16-20 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>COMM 101</td>
<td>Communication Core Area</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Mathematics Core Area</td>
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<td>SCI 101</td>
<td>Science Core Area</td>
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<tr>
<td>WRIT 101</td>
<td>Writing Core Area</td>
</tr>
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</table>

CHOICE 2: Automotive Related - 4-5 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AUTO 160</td>
<td>Auto Body Repair and Painting</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance Tune-Up</td>
</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 71

NOTES:

1. Students must obtain department approval from the Transportation Department prior to registering for these courses.
2. AUTO 162 may be repeated one time for additional internship experience.

SUGGESTED COURSE SEQUENCE

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

AUTO 110 AUTO 112 AUTO 114 AUTO 122
AUTO 116 AUTO 124 AUTO 126 AUTO 150

AUTO COLLISION REPAIR
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0186 (Effective Fall 2003 - Summer 2006)

This program provides the technical knowledge and skills needed to perform collision repair and refinishing. Students will be prepared for an entry level position. This program does not provide state certification. State certification tests are available at any Michigan Secretary of State Office. The Auto Collision Repair Program is certified by the National Automotive Technicians Education Foundation (NATEF).

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 112</td>
<td>Non-Structural Repair (See Note 1)</td>
</tr>
<tr>
<td>AUTO 114</td>
<td>Advanced Non-Structural Repair</td>
</tr>
<tr>
<td>AUTO 116</td>
<td>Auto Body Welding and Cutting (See Note 1)</td>
</tr>
<tr>
<td>AUTO 118</td>
<td>Auto Body Structural Repair</td>
</tr>
<tr>
<td>AUTO 122</td>
<td>Introduction to Refinishing (See Note 1)</td>
</tr>
<tr>
<td>AUTO 124</td>
<td>Advanced Refinishing</td>
</tr>
<tr>
<td>AUTO 126</td>
<td>Auto Service 1</td>
</tr>
<tr>
<td>AUTO 130</td>
<td>Math 101</td>
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<td>MATH 101</td>
<td>Math -Principles and Practices</td>
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</table>

MINIMUM TOTAL: 35

NOTES:

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

SUGGESTED COURSE SEQUENCE

AUTO 110 AUTO 112
AUTO 116 AUTO 122
AUTO 150 MATH 050
AUTOMOTIVE DRIVE LINES
CERTIFICATE OF COMPLETION

Curriculum Code: 0659 (Effective Fall 2003 - Summer 2008)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians, though the Secretary of State. State certification tests are available at the end of fall and spring semester in the LCC Automotive Program Office. The Automotive Technology Program is a National Automotive Technicians Education Foundation (NATEF) Certified Training Program, evaluated by the National Institute for Automotive Service Excellence (ASE).

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Transportation Technologies Department located at the LCC Aviation Center, 3428 W. Hangar Drive, Lansing MI 48906, telephone number (517) 267-5880.

REQUIREMENTS

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</tr>
<tr>
<td>AUTO 120</td>
<td>Automotive Brakes</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 150</td>
<td>Auto Steering &amp; Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 235</td>
<td>Adv Computer/ABS Brake System</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 12 CREDITS

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

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

AUTO 100  AUTO 140  AUTO 150
AUTO 235

TOTAL: 17 CREDITS

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

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

AUTO 100  AUTO 120  AUTO 121  AUTO 122  AUTO 130
AUTOMOTIVE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0238 (Effective Fall 2003 - Summer 2009)

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 a licensed automotive technician through the Secretary of State. State certification tests are available at the end of fall and spring semesters in the LCC Automotive Program Office. The Automotive Technology Program is a National Automotive Technicians Education Foundation (NATEF) Certified Training Program, evaluated by the National Institute for Automotive Service Excellence (ASE).

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Transportation Technologies Department located at the LCC Aviation Center, 3428 W. Hangar Drive, Lansing, MI 48906, telephone number (517) 267-5882.

REQUIREMENTS

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<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 120</td>
<td>Auto Drive Train</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 121</td>
<td>Automatic Transmissions I</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 122</td>
<td>Automatic Transmissions II</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 130</td>
<td>Automotive Engines</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 140</td>
<td>Automotive Brakes</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 150</td>
<td>Auto Steerage &amp; Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Heat &amp; Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 235</td>
<td>Air Computer/ABS Brake System</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

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<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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</tbody>
</table>

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

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>13-16</td>
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</tbody>
</table>

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area
- Global Perspectives and Diversity Core Area
- Mathematics Core Area
- Science Core Area
- Writing Core Area (See Note 1)

CHOICE 2: Automotive Related (See Note 2)

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
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</tbody>
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- Small Engine Repair
- Light Duty Diesel Engines
- Non-Structural Repair
- Introduction to Refinishing
- Intro to Alternative Fuels
- Alternative Fuels-CNG
- Alternative Fuels-LPG
- Automotive Service Laboratory
- Automotive Internship (See Note 3)
- Machine Tool Survey
- Metallurgy and Heat Treat

MINIMUM TOTAL

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>69</td>
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</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an Audit conducted by the Registrar's Office. The name of the program cannot be used by students upon completion of any other certificate. Students are expected to apply for one certificate prior to the semester they intend to complete.

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Contact the Automotive Technology Program Coordinator for additional automotive related classes that will satisfy this area.
3. AUTO 285 may be repeated one time for a total of 6 credits toward this degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who are not able to follow the course sequence suggested below should contact an academic advisor or counselor for help with adjustments.

<table>
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<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 121</td>
<td>AUTO 120</td>
<td>AUTO 235</td>
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AUTOMOTIVE TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0140 (Effective Fall 2003 - Summer 2009)

This certificate program prepares individuals to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at the end of fall and spring semesters in the LCC Automotive Program Office. The Automotive Technology Program is a National Automotive Technicians Education Foundation (NATEF) Certified Training Program, evaluated by the National Institute for Automotive Service Excellence (ASE).

REQUIREMENTS (See Note 1)

<table>
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<tr>
<th>CODE</th>
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</tr>
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<td>AUTO 235</td>
<td>Air Computer/ABS Brake System</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
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</table>

MINIMUM TOTAL

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>35</td>
</tr>
</tbody>
</table>

NOTE:

1. It is recommended that students have the equivalent of a Math Level 4 to be successful in this curriculum. Math placement testing is available in the Assessment Center, Greater Vocational-Technical Center, Suite 2130, telephone number (517) 267-5600.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<th>IV</th>
</tr>
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<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 120</td>
<td>AUTO 150</td>
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<tr>
<td>AUTO 110</td>
<td>AUTO 140</td>
<td>AUTO 225</td>
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<tr>
<td>AUTO 130</td>
<td>AUTO 180</td>
<td>AUTO 280</td>
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</tr>
<tr>
<td>AUTO 215</td>
<td>AUTO 215</td>
<td>AUTO 215</td>
<td></td>
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</tbody>
</table>
ENGINE PERFORMANCE/DIAGNOSIS
CERTIFICATE OF COMPLETION

Curriculum Code: 0648 (Effective Fall 2003 - Summer 2005)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at the end of fall and spring semester in the LCC Automotive Program Office. The Automotive Technology Program is a National Automotive Technicians Education Foundation (NATEF) Certified Training Program, evaluated by the National Institute for Automotive Service Excellence (ASE).

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Transportation Technologies Department located at the LCC Aviation Center, 3428 W. Hangar Drive, Lansing, MI 48906, telephone number (517) 267-5360.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>AUTO 100</td>
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<td>3</td>
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<tr>
<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 235</td>
<td>Adv Computer/ABS Brake System</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 21 CREDITS

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

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

<p>| | | |</p>
<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 215</td>
<td>AUTO 235</td>
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<tr>
<td>AUTO 110</td>
<td></td>
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</tr>
<tr>
<td>AUTO 225</td>
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</tbody>
</table>

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

Curriculum Code: 0757 (Effective Fall 2003 - Summer 2006)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 489-1406.

REQUIREMENTS

<table>
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<tr>
<th>COURSE</th>
<th>TITLE</th>
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<td>AVEL 125</td>
<td>Aircraft Systems II</td>
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<td>AVEL 132</td>
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<td>AVEL 210</td>
<td>Aircraft Structures III</td>
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<td>AVEL 211</td>
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<tr>
<td>AVEL 212</td>
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<tr>
<td>AVEL 246</td>
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<tr>
<td>AVGM 111</td>
<td>Avionics Systems I</td>
<td>2</td>
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<tr>
<td>AVGM 112</td>
<td>Avionics General I</td>
<td>2</td>
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<tr>
<td>AVGM 113</td>
<td>Avionics General II</td>
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</tr>
<tr>
<td>AVGM 114</td>
<td>Material and Procecesses</td>
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TOTAL: 57 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>AVEL 210</td>
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<td>AVEL 212</td>
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<td>AVGM 111</td>
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<td>AVGM 112</td>
<td>Avionics General I</td>
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<tr>
<td>WELD 210</td>
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TOTAL: 16-20 CREDITS

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an Audit conducted by the Registrar's Office. To be eligible for graduation, students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

SUGGESTED COURSE SEQUENCE

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

I | II | III | IV
---|----|----|----
AVEL 105 | AVEL 125 | AVEL 126 | AVAF 127
AVGM 111 | AVEL 126 | AVEL 132 | AVAF 128
AVGM 112 | AVEL 209 | AVEL 209 | AVAF 209
AVGM 113 | AVEL 211 | AVEL 210 | AVAF 210
AVGM 214 | WELD 210 | AVEL 212 | AVEL 248

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AIRFRAME MAINTENANCE TECH
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1036 (Effective Fall 2003 - Summer 2008)

This certificate of achievement enables a non-licensed individual to expand their knowledge of airframe maintenance practices used to maintain aircraft in accordance with the Title 14 Code of Federal Aviation Regulations. While enrolled in this program, students will learn the basic science and technical knowledge necessary to repair and maintain modern aerospace vehicles. Graduates will have demonstrated technical abilities in flight control repair, hydraulic and pneumatic systems inspection and repair, flight control operation, fuel system maintenance, and aircraft electrical and airframe inspections. Completion of this certificate may be applied to the Airframe and Powerplant License provided the student meets the requirements of the Federal Aviation Regulation Part 147.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Aviation Technology Program at the LCC Aviation Center, Room 109, telephone number (517) 483-1406.

REQUIREMENTS

<table>
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<td>AVAF 246</td>
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<td>1</td>
</tr>
<tr>
<td>AVEL 200</td>
<td>Flight Line Testing</td>
<td>2</td>
</tr>
<tr>
<td>WELD 210</td>
<td>Aircraft Welding</td>
<td>2</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 38

NOTES:
1. In accordance with Federal Aviation Regulation Part 147, completing the aforementioned curriculum does not constitute approval to take the Federal Aviation Administration Airframe or Powerplant Mechanic written, oral, and practical license exams. The FAA approved training institution must review individual student enrollment, course records, and certification course testing results before considering each student for certification approval. Students are required to meet Federal Aviation Regulations Part 147 training requirements to be eligible for certification. Students will be required to complete each certification course with a minimum grade of 71 percent and pass pre-tests for General and Airframe with a minimum grade of 60 percent to be considered for the Federal Aviation Administration written tests. To obtain FAA certification approval, students will be required to complete additional coursework.
2. Students must complete each course with a minimum grade of 71 percent to receive the Lansing Community College certificate of achievement.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who are unable to follow the course sequence suggested below for any reason, should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
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<td>AVAF 246</td>
</tr>
<tr>
<td>AVAF 211</td>
<td>WELD 210</td>
<td>AVEL 200</td>
</tr>
</tbody>
</table>

BASIC AVIATION TECHNOLOGY
CERTIFICATE OF COMPLETION

Curriculum Code: 1037 (Effective Fall 2003 - Summer 2008)

This certificate of completion enables a non-licensed individual to develop the knowledge and understanding of basic aviation maintenance practices used to maintain aircraft in accordance with the Title 14 Code of Federal Aviation Regulations. While enrolled in this program, students will learn the basic science and technical knowledge necessary to repair and maintain modern aerospace vehicles. Graduates will have demonstrated technical abilities in aircraft ground handling and servicing, aircraft fueling procedures, and aircraft maintenance and repair.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Aviation Technology Training Program at the LCC Aviation Center, Room 109, telephone number (517) 483-1406.

REQUIREMENTS

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<th>CODE</th>
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<td>AVGM 112</td>
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<td>6</td>
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<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
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</tr>
<tr>
<td>AVGM 114</td>
<td>Material and Processes</td>
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MINIMUM TOTAL 19

NOTES:
1. In accordance with Federal Aviation Regulation Part 147, completing the aforementioned curriculum does not constitute approval to take the Federal Aviation Administration Airframe or Powerplant Mechanic written, oral, and practical license exams. The FAA approved training institution must review individual student enrollment, course records, and certification course testing results before considering each student for certification approval. Students are required to meet Federal Aviation Regulations Part 147 training requirements to be eligible for certification. Students will be required to complete each certification course with a minimum grade of 71 percent and pass pre-tests for General and Airframe with a minimum grade of 60 percent to be considered for the Federal Aviation Administration written tests. To obtain FAA certification approval, students will be required to complete additional coursework.
2. Students must complete each course with a minimum grade of 71 percent to receive the Lansing Community College certificate of achievement.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who are unable to follow the course sequence suggested below for any reason, should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
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<tbody>
<tr>
<td>AVGM 111</td>
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<td>AVGM 112</td>
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<tr>
<td>AVGM 113</td>
</tr>
<tr>
<td>AVGM 114</td>
</tr>
</tbody>
</table>
**AVIATION FLIGHT TECHNOLOGY**
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0559 (Effective Fall 2003 - Summer 2006)

The commercial flight training program provides all required ground, simulator, and in-flight technical training to meet Federal Aviation Administration requirements for Commercial Pilot Certification. This program will conduct ab-initio training (no previous experience) or build on previous experience of the student. Students entering the program are required to accomplish an FAA 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.

**PREREQUISITES**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**
Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 490-4404.

**REQUIREMENTS**
TOTAL: 43 CREDITS

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<th>Code</th>
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<td>AVFT 202</td>
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<td>Flight Training III (See Note 3)</td>
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<tr>
<td>AVFT 204</td>
<td>Flight Training IV (See Note 4)</td>
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<tr>
<td>AVGS 101</td>
<td>Private Pilot Ground School</td>
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<tr>
<td>AVGS 121</td>
<td>Navigation</td>
<td>4</td>
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<tr>
<td>AVGS 211</td>
<td>Instrument Flight Ground School</td>
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<td>AVGS 221</td>
<td>Commercial Pilot Ground School</td>
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<td>AVST 214</td>
<td>Flight Simulator IV</td>
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**LIMITED CHOICE REQUIREMENTS**
TOTAL: 20-30 CREDITS

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

**CHOICE 1:** General Education Core Areas
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area: 3 credits
- Global Perspectives and Diversity Core Area: 3 credits
- Mathematics Core Area: 3 credits
- Science Core Area: 4 credits
- Writing Core Area: 3 credits

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

- AVFT 295 CFII Flight Training: 5 credits
- AVFT 205 Instrument Instructor Flight: 2.5 credits
- AVFT 216 Multi-Engine Flight Training: 1.5 credits
- AVFT 226 Multi-Engine Instructor Flight: 4 credits
- AVFT 234 Tail Wheel Transition: 1 credit
- AVST 215 Flight Simulator Ground School: 4 credits
- AVST 216 Multi-Engine Flight Simulator: 1 credit

**MINIMUM TOTAL**
69 credits

**NOTES:**
1. This course is offered in modules: AVFT 201A, AVFT 201B, and AVFT 201CC.
2. This course is offered in modules: AVFT 202A and AVFT 202B.
3. This course is offered in modules: AVFT 203A and AVFT 203B.
4. This course is offered in modules: AVFT 204A and AVFT 204B.

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

Curriculum Code: 1046 (Effective Fall 2003 - Summer 2008)

Avionics electronics (avionics) is the application of electronics to aviation. Avionics technicians install, troubleshoot, and service complex communication, navigation, radar, autopilot, and related electronic systems. The avionics flightline work environment is fast paced, well organized, and dictated by the airline flight schedule. Students will find employment opportunities in airlines, airports, aircraft manufacturers, and government agencies. In addition, LCC offers on-site testing for the FCC General Radiotelephone Operator License. New students do not need any special skills to begin the Avionics Flightline Maintenance 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 Course Descriptions or Course Offerings for course prereq-
usite information. See the Assessment and Placement Testing section for skills assessment and advising information.

#### INFORMATION
Contact the Aviation Technology Training Program at the LCC Aviation Center, Room 109, telephone number (517) 482-1406.

#### REQUIREMENTS
**TOTAL: 65 CREDITS**

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<td>Aircraft Structures I</td>
<td>4</td>
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<td>AVAF 209</td>
<td>Aircraft Structures II</td>
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<td>AVAF 211</td>
<td>Aircraft Electrical I</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
<td>6</td>
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<td>AVGM 112</td>
<td>Aviation General II</td>
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<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
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</tr>
<tr>
<td>AVEL 150</td>
<td>Avionics Test Equipment</td>
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<td>AVEL 151</td>
<td>Avionics Test Equipment Lab</td>
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</tr>
<tr>
<td>AVEL 190</td>
<td>Receiver Troubleshooting Lab</td>
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<tr>
<td>AVEL 191</td>
<td>Receiver Troubleshooting</td>
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</tr>
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<td>AVEL 200</td>
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<td>AVEL 220</td>
<td>Avionics Systems I</td>
<td>3</td>
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<td>AVEL 221</td>
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<td>AVEL 225</td>
<td>FCC License Preparation</td>
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<td>Avionics Systems II</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

**TOTAL: 7-8 CREDITS**

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

**CHOICE 1: General Education Core Areas** 7-8 Credits (See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

| Communication Core Area (See Note 1) | 0 |
| Global Perspectives and Diversity Core Area | 3-4 |
| Mathematics Core Area (See Note 1) | 3-4 |
| Science Core Area | 3-4 |
| Writing Core Area (See Note 1) | 0 |

**MINIMUM TOTAL**

| 12 |

**NOTES:**
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students must complete all courses with a minimum grade of 2.0 to receive the LCC Associate Degree.

---

### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out which departments plan to offer courses. Students who have not yet completed these courses are encouraged to follow the course sequence suggested below (for example, those who are part-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>AVGM 111</td>
<td>AVAF 208</td>
<td>AVAF 134</td>
<td>AVEL 220</td>
</tr>
<tr>
<td>AVGM 112</td>
<td>AVAF 211</td>
<td>AVEL 190</td>
<td>AVEL 221</td>
</tr>
<tr>
<td>AVGM 113</td>
<td>AVEL 150</td>
<td>AVEL 191</td>
<td>ELCT 131</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>AVEL 151</td>
<td>AVEL 200</td>
<td>MATH 115</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>MATH 114</td>
<td>AVEL 201</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

---

### AVIONICS FLIGHTLINE MAINT.
#### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1952 (Effective Fall 2003 - Summer 2003)

This certificate of achievement enables a student to expand their knowledge of avionics related maintenance procedures used to maintain aircraft in accordance with the Title 14 Code of Federal Aviation Regulations. Students enrolled in this program will learn the technical knowledge necessary to repair and maintain modern aircraft electronics systems. Courses offered in this certificate may be applied to the Associate in Applied Science Degree.

**REQUIREMENTS**

**TOTAL: 42 CREDITS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVAF 134</td>
<td>Aircraft Instruments</td>
<td>2</td>
</tr>
<tr>
<td>AVAF 209</td>
<td>Aircraft Structures II</td>
<td>4</td>
</tr>
<tr>
<td>AVAF 211</td>
<td>Aircraft Electrical I</td>
<td>4</td>
</tr>
<tr>
<td>AVAF 215</td>
<td>Avionics Test Equipment</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 150</td>
<td>Avionics Test Equipment Lab</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 190</td>
<td>Receiver Troubleshooting</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 200</td>
<td>Flight Line Testing</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 201</td>
<td>Avionics Flightline Testing Lab</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 220</td>
<td>Avionics Systems I</td>
<td>3</td>
</tr>
<tr>
<td>AVEL 221</td>
<td>Avionics Systems I Lab</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 225</td>
<td>FCC License Preparation</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 230</td>
<td>Avionics Systems II</td>
<td>3</td>
</tr>
<tr>
<td>AVEL 231</td>
<td>Avionics Systems II Lab</td>
<td>2</td>
</tr>
<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
<td>2</td>
</tr>
<tr>
<td>AVGM 112</td>
<td>Aviation General II</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
<td>6</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

| 42 |

**NOTES:**
1. Students must complete each course with a minimum grade of 2.0 to receive the LCC Certificate of Achievement.
2. Students who are testing for the Federal Communication Commission General Radiotelephone Operators License should also enroll in AVEL 225.

### SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVGM 111</td>
<td>AVAF 211</td>
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<td>AVAF 208</td>
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<td>AVGM 112</td>
<td>AVEL 150</td>
<td>AVEL 190</td>
<td>AVEL 220</td>
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<td>AVGM 113</td>
<td>AVEL 151</td>
<td>AVEL 191</td>
<td>AVEL 221</td>
</tr>
<tr>
<td>AVEL 200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**V**

| AVEL 230 |     |
| AVEL 231 |     |
AVIONICS INSTALLATION
CERTIFICATE OF COMPLETION

Curriculum Code: 0847 (Effective Fall 2003 - Summer 2006)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 25 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVAF 130</td>
<td>Avionics Airframe Applications</td>
<td>3</td>
</tr>
<tr>
<td>AVAF 134</td>
<td>Aircraft Instruments</td>
<td>2</td>
</tr>
<tr>
<td>AVAF 211</td>
<td>Aircraft Electrical I</td>
<td>4</td>
</tr>
<tr>
<td>AVEL 150</td>
<td>Avionics Test Equipment</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 151</td>
<td>Avionics Test Equipment Lab</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 200</td>
<td>Flight Line Testing</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 201</td>
<td>Flight Line Testing Lab</td>
<td>1</td>
</tr>
<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
<td>4</td>
</tr>
<tr>
<td>ELCT 131</td>
<td>Digital Basics</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Practical Experience

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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>AVEL 297</td>
<td>Avionics Internship</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 299</td>
<td>Advanced Avionics Laboratory</td>
<td>2</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 28

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

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>Course 1</th>
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<th>Course 3</th>
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<tr>
<td>AVAF 130</td>
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<tr>
<td>AVAF 134</td>
<td>AVEL 150</td>
<td>AVEL 201</td>
<td></td>
</tr>
<tr>
<td>AVGM 111</td>
<td>AVEL 151</td>
<td>Lin.Ch.</td>
<td></td>
</tr>
<tr>
<td>AVGM 113</td>
<td>ELCT 131</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The official documentation of program completion status is an audit conducted by the Registrar's Office. Students are not allowed to complete courses after the semester they intend to graduate.

LANSING COMMUNITY COLLEGE CATALOG 2003-2005 77
POWERPLANT MAINTENANCE TECH
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0745 (Effective Fall 2003 - Summer 2006)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 59 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>AVAF 212</td>
<td>Aircraft Electrical II</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 112</td>
<td>Aviation General II</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 114</td>
<td>Material and Processes</td>
<td>5</td>
</tr>
<tr>
<td>AVPP 241</td>
<td>Reciprocating Engine</td>
<td>8</td>
</tr>
<tr>
<td>AVPP 251</td>
<td>Reciprocating Engine Systems</td>
<td>5</td>
</tr>
<tr>
<td>AVPP 253</td>
<td>Reciprocating Ignition Systems</td>
<td>5</td>
</tr>
<tr>
<td>AVPP 255</td>
<td>Reciprocating Induction System</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 257</td>
<td>Aircraft Propeller Systems</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 259</td>
<td>Turbine Engine I</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 261</td>
<td>Turbine Engine II</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 263</td>
<td>Turbine Engine Systems</td>
<td>2</td>
</tr>
<tr>
<td>AVPP 265</td>
<td>Powerplant Instruments</td>
<td>2</td>
</tr>
<tr>
<td>AVPP 267</td>
<td>National Powerplant Cert Proc</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 16-20 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVGM 111</td>
<td>AVAF 212</td>
<td>AVPP 253</td>
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<td>AVGM 112</td>
<td>AVPP 241</td>
<td>AVPP 255</td>
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<td>AVGM 113</td>
<td>AVPP 251</td>
<td>AVPP 257</td>
</tr>
<tr>
<td>AVGM 114</td>
<td>Lim.Ch.</td>
<td>AVPP 259</td>
</tr>
</tbody>
</table>

NOTES:
1. In accordance with Federal Aviation Regulation part 147, completing the aforementioned curriculum does not constitute approval to take the Federal Aviation Administration Airframe or Powerplant Mechanics written, oral, and practical license exams. The FAA approved training director must review individual student enrollment, course records, and certification course testing results before considering each student for certification approval. Students are required to meet Federal Aviation Regulations Part 147 training requirements to be eligible for certification. Students will be required to complete each certification course with a minimum grade of 71 percent and pass pre-tests for General and Powerplant with a minimum grade of 85 percent to be considered for the Federal Aviation Administration written tests. To obtain FAA certification approval, students will be required to complete additional coursework.
2. Students must complete each course with a minimum grade of 71 percent to receive the Lansing Community College certificate of achievement.

SUGGESTED COURSE SEQUENCE

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

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Credit Area</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>4-5</td>
</tr>
<tr>
<td>Writing Core Area</td>
<td>2-4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 75

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
## POWERPLANT MAINTENANCE TECH
### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1035 (Effective Fall 2003 - Summer 2005)

This certificate of achievement enables a non-licensed individual to expand their knowledge of powerplant maintenance practices used to maintain aircraft engines in accordance with the Title 14 Code of Federal Aviation Regulations. While enrolled in this program, students will learn the basic science and technical knowledge necessary to repair and maintain modern aerospace vehicle powerplants. Graduates will have demonstrated technical abilities in the following areas: reciprocating and turbine engine overhaul and repair, ignition and fuel system maintenance and repair, engine electrical system diagnosis and repair, and engine inspections. Completion of this certificate may be applied to the Airframe and Powerplant Licenses provided the student meets the requirements of the Federal Aviation Regulation Part 147.

### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Aviation Technology Training Program at the LCC Aviation Center, Room 109, telephone number (517) 483-1400.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVAF 212</td>
<td>Aircraft Electrical II</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 241</td>
<td>Reciprocating Engine</td>
<td>8</td>
</tr>
<tr>
<td>AVPP 251</td>
<td>Reciprocating Engine Sys.</td>
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</tr>
<tr>
<td>AVPP 252</td>
<td>Reciprocating Ignition Sys.</td>
<td>5</td>
</tr>
<tr>
<td>AVPP 255</td>
<td>Reciprocating Induction System</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 257</td>
<td>Aircraft Propeller Systems</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 263</td>
<td>Turbine Engine I</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 261</td>
<td>Turbine Engine II</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 263</td>
<td>Turbine Engine Systems</td>
<td>2</td>
</tr>
<tr>
<td>AVPP 205</td>
<td>Powerplant Instruments</td>
<td>2</td>
</tr>
<tr>
<td>AVPP 267</td>
<td>National Powerplant Cert.</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL: 40 CREDITS**

**MINIMUM TOTAL:** 40

### NOTES:

1. In accordance with Federal Aviation Regulation Part 147, completing the aforementioned curriculum does not constitute approval to take the Federal Aviation Administration Airframe or Powerplant Mechanic written, oral, and practical license exams. The FAA approved training director must review individual student enrollment, course records, and certification course testing results before considering each student for certification approval. Students are required to meet Federal Aviation Regulations Part 147 training requirements to be eligible for certification. Students will be required to complete each certification course with a minimum grade of 71 percent and pass pre-tests for General and Airframe with a minimum grade of 60 percent to be considered for the Federal Aviation Administration written tests. To obtain FAA certification approval, students will be required to complete additional course work.

2. Students must complete each course with a minimum grade of 71 percent to receive the Lansing Community College certificate of achievement.

### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the 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>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVAF 212</td>
<td>AVPP 252</td>
<td>AVPP 251</td>
</tr>
<tr>
<td>AVPP 241</td>
<td>AVPP 253</td>
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<td>AVPP 251</td>
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<td>AVPP 265</td>
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<tr>
<td>AVPP 251</td>
<td>AVPP 257</td>
<td>AVPP 250</td>
</tr>
<tr>
<td>AVPP 257</td>
<td>AVPP 258</td>
<td>AVPP 257</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0243 (Effective Fall 2003 - Summer 2006)

This degree program, which can be completed entirely online, 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/on-the-job positions. Additional education will enhance an individual’s employability 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Total Credits</th>
</tr>
</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>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 216</td>
<td>Bus Law I, Basic Principles</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>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
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</table>

TOTAL: 34 CREDITS

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>Choice</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Choice 1: General Education Core Areas</td>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ECON 201</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>LEGL 216</td>
<td>Bus Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MGMT 223</td>
<td>Principles of Management</td>
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<td></td>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
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</tr>
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<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
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<td></td>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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</table>

TOTAL: 27-32 CREDITS

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
2. Choose courses with a MGMT prefix that are not already used to meet degree requirements. Up to 3 credits total from the T.I.M.E. Series may be used. MGMT 240, MGMT 279, BUSN 256 may also be used.
3. Choose courses with a MKTG prefix that are not already used to meet degree requirements.
4. Choose CABS-prefix courses of 110 or above.
5. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
6. This degree can be completed entirely online. Students wishing to complete an online business transfer program should consult with an advisor in the Business Department.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the 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>Sequence</th>
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<tbody>
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<td></td>
<td></td>
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<tr>
<td>ACCG 210</td>
<td>ECON 201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGMT 200</td>
<td>MGMT 223</td>
<td></td>
<td></td>
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<td>MGMT 234</td>
<td>MKTG 200</td>
<td></td>
<td></td>
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<tr>
<td>SPCH 110</td>
<td>WRIT 127</td>
<td></td>
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<td>BUSN 250</td>
<td>BUSN 251</td>
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<td>ECON 202</td>
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<td>LABR 200</td>
<td>LABR 204</td>
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<td>LEGL 217</td>
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<tr>
<td>MGMT 245</td>
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MINIMUM TOTAL: 61

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

Curriculum Code: 0835 (Effective Fall 2003 - Summer 2008)

The Internet is changing the way business is being conducted and the way societies function. E-business is the use of technology in day-to-day business transactions. Students will learn to apply technical and behavioral skills to the various progressive possibilities of business as it relates to current business practices. This degree can be completed entirely online. Graduates are prepared to work in a variety of manufacturing, wholesaling, and retailing environments, as well as the service sector of our economy. Not all courses in 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Business Department, Old Central Building, Room 213, telephone number (517) 483-1529.

REQUIREMENTS

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>3</td>
</tr>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 160</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 203</td>
<td>Developing Pages for the Web (See Note 1)</td>
<td>3</td>
</tr>
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<td>CISB 204</td>
<td>Commercial Internet Site Mgmt</td>
<td>3</td>
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<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
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<td>MKTG 110</td>
<td>Mktg/Manage Your Profess Image</td>
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<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principals of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 210</td>
<td>Marketing on the Internet</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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</table>

TOTAL: 43 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas 7-10 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where applicable, are available for each core area.)

Communication Core Area (See Note 2) 0
Global Perspectives and Diversity Core Area (See Note 2) 0
Mathematics Core Area 3-4
Science Core Area 4-5
Writing Core Area (See Note 2) 0

TOTAL: 17-19 CREDITS

CHOICE 2: Business Related (See Note 3) 10 Credits

ACCG 210 | Principles of Accounting I        | 4            |
CABS 100 | Small Business Management         | 3            |
CABS 110 | Intro to Microsoft Office         | 3            |
CISB 119 | Intro Window Prog Visual BASIC    | 4            |
CISB 122 | Adv Windows Prog Visual BASIC     | 3            |
CISB 253 | WWW Interactive Programming       | 4            |
ECON 201 | Principles of Economics/Micro     | 3            |
MGMT 180 | Managing Customer Relations       | 3            |
MGMT 200 | Creative Thinking for Business    | 3            |
MKTG 130 | Retailing                        | 3            |
MKTG 240 | Introduction to Advertising       | 3            |
MKTG 250 | Managerial Marketing              | 3            |
MKTG 234 | Marketing Research                | 3            |
MKTG 210 | Consumer Behavior                 | 2            |
MKTG 229 | Public Relations                  | 2            |

MINIMUM TOTAL 60

NOTES:
1. Students in this curriculum may be granted approval to waive the prerequisites for this course by calling the Business Department at 483-1522.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students may also choose up to 3 credits of T.I.M.E. Series courses (MGMT 230-275). Students should confer with a Business Careers Advisor to assure that the selection of Limited Choice courses will best fit their career plans.

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>CISB 114</td>
<td>CISB 204</td>
<td>CISB 120</td>
</tr>
<tr>
<td>CABS 100</td>
<td>CISB 200</td>
<td>MGMT 234</td>
<td>MGMT 119</td>
</tr>
<tr>
<td>CABS 195</td>
<td>MKTG 200</td>
<td>MKTG 120</td>
<td>MKTG 210</td>
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<tr>
<td>CISB 100</td>
<td>SPCH 110</td>
<td>WRIT 124</td>
<td>Lim.Ch.</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
**E-BUSINESS CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0845 (Effective Fall 2003 - Summer 2006)

This certificate provides students with the opportunity to develop technical and marketing knowledge necessary to use the Internet as a business tool. Students will learn how to use business, marketing, and web related resources. Emphasis in this program is on business applications. This certificate can be completed entirely online. All of the course work may be applied toward the E-Business Associate in Business Degree.

**REQUIREMENTS**

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<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISB 203</td>
<td>Developing Pages for the Web (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>CISB 204</td>
<td>Commercial Internet Site Mgmt</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 210</td>
<td>Marketing on the Internet</td>
<td>3</td>
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</table>

**TOTAL: 22 CREDITS**

**LIMITED CHOICE REQUIREMENTS**

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

<table>
<thead>
<tr>
<th>CHOICE 1:</th>
<th>BUSINESS RELATED (See Note 2)</th>
<th>8-9 Credits</th>
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<tr>
<td>BUSN 295</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
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<td>CISB 100</td>
<td>Info Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
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<tr>
<td>MKTG 221</td>
<td>Consumer Behavior</td>
<td>2</td>
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<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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**MINIMUM TOTAL**

30

**NOTES:**

1. Students in this curriculum may be granted approval to waive the prerequisites for this course by calling the Business Department at 483-1522.
2. Students may also choose up to 2 credits of T.I.M.E. Series courses (MGMT 240-279). Students should confer with a Business Careers Program Advisor to assure that the selection of Limited Choice courses will best fit their career plans.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>BUSN 118</th>
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<td>CABS 103</td>
<td>CISB 204</td>
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<td>CABS 195</td>
<td>MKTG 120</td>
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<tr>
<td>MKTG 200</td>
<td>MKTG 210</td>
</tr>
<tr>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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</table>
INTERNATIONAL BUSINESS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0240 (Effective Fall 2003 - Summer 2008)

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 the hemisphere and overseas. Knowledge of a foreign language and a technical or business specialty increases one's employability. This degree can be completed entirely online. 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 degree can be completed entirely online.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Department Office, Ovet Central Building, Room 210, telephone number (517) 482-1463.

REQUIREMENTS

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<tr>
<td>ACGC 210</td>
<td>Principles of Accounting I</td>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>CISG 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics-Micro</td>
<td>3</td>
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<td>ECON 202</td>
<td>Principles of Economics-Macro</td>
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<td>MKTG 221</td>
<td>Diversity in the Workplace</td>
<td>3</td>
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<td>MKTG 251</td>
<td>Multicultural/Mediation Marketing</td>
<td>3</td>
</tr>
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<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</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

10-13 Credits (See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 1) 6
- Global Perspectives and Diversity Core Area (See Note 1) 6
- Mathematics Core Area 3-4
- Science Core Area 4-5
- Writing Core Area 3-4

CHOICE 2: Foreign Language (Choose one subchoice)

8 Credits

Subchoice 2A

- FREN 121 | Elementary French I 4
- FREN 122 | Elementary French II 4

Subchoice 2B

- GRAN 121 | Elementary German I 4
- GRAN 122 | Elementary German II 4

Subchoice 2C

- JAPN 121 | Elementary Japanese I 4
- JAPN 122 | Elementary Japanese II 4

Subchoice 2D

- SPAN 121 | Elementary Spanish I 4
- SPAN 122 | Elementary Spanish II 4

MINIMUM TOTAL: 61

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students should confer with a Business Department program advisor to advise that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

Students should refer to course descriptions in the catalog to determine when courses are offered. Students who have any questions about the course sequence must contact the Business Department program advisor to assist with adjustments.

III

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<thead>
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<th>BUSN 118</th>
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<th>ACGC 210</th>
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<td>CISG 100</td>
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<td>MKTG 234</td>
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<td>MKTG 119</td>
<td>Lim.Ch.4</td>
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LANSING COMMUNITY COLLEGE CATALOG 2003-2005
**CHILD DEVELOPMENT ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 6108 (Effective Fall 2003 - Summer 2006)

This degree program prepares individuals to work in child care as a teacher, teacher assistant, or program director. The curriculum is aligned with the standards issued by the National Association for the Education of Young Children and the Council for Professional Recognition (CDA). Students learn to plan and implement high quality, developmentally appropriate programs for all ages of children. Infants through school-age, in both centers and family child care homes. Graduates of the associate degree program meet the educational requirements for child care center program directors as specified by the State of Michigan Child Care Center Licensing Regulations. The program involves several semesters of daytime field work in child care settings. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 750, telephone number (517) 483-1410.

<table>
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<tr>
<td>CHDV 111</td>
<td>Child Guidance/Communication (See Note 1)</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health/Safety/Issues/Child Care</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Preschool Curric/Child Care (See Note 1)</td>
</tr>
<tr>
<td>CHDV 222</td>
<td>School-Age Child Care Program Dev</td>
</tr>
<tr>
<td>ISCI 121</td>
<td>Integrated Soc for Education</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:** General Education Core Areas

- Communication Core Area
- Global Perspectives and Diversity Core Area (See Note 3)
- Mathematics Core Area (See Note 4)
- Science Core Area (See Note 2)
- Writing Core Area (See Note 3)

**CHOICE 2:** Science (See Note 5)

8 Credits

**CHOICE 3:** Humanities (See Note 5)

8 Credits

**CHOICE 4:** Administration

2 Credits

- CHDV 121 | Family Child Care Management |
- CHDV 230 | Early Childhood Center Admin |

**CHOICE 5:** Professional Related Courses (See Note 6)

3 Credits

- EMSB 127 | First Aid/CPR Ser/Daycare Prov |
- HUSE 100 | Introduction to Human Services |
- HUSE 101 | Personal Dimensions/Human Serv |
- HUSE 110 | Intro to Child Abuse and Neglect |
- HUSE 112 | Understanding/Substance Abuse |
- HUSE 120 | Introduction/Family Violence |

**MINIMUM TOTAL**

68

**NOTES:**

1. CHDV 111 and CHDV 220 must be completed with a minimum 2.5 grade or better. All other required CHDV courses must be completed with a minimum 2.0 grade or better.
2. CHDV 224 requires departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 224. Applications for departmental approval are available in the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750.
3. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
4. MATH 118 or MATH 119 are recommended but do not transfer. Students planning to transfer should consult MATH 112.
5. See the MACRAO Transfer Agreement in the "Transfer Information" section for appropriate science and humanities courses. BIOL 145 or SOC 122 are strongly recommended as the science requirement. ENGL 208 is strongly recommended as a humanities choice.
6. Students may also choose from CHDV-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 consult an academic advisor or counselor for help with adjustments.

<table>
<thead>
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<th>I</th>
<th>II</th>
<th>III</th>
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<tr>
<td>CHDV 101</td>
<td>CHDV 113</td>
<td>CHDV 112</td>
<td>CHDV 188</td>
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<td>CHDV 111</td>
<td>CHDV 220</td>
<td>CHDV 221</td>
<td>CHDV 224</td>
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<td>CHDV 222</td>
<td>ISCI 121</td>
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</table>

**WRIT 122**

Lim. Ch. 2

Lim. Ch. 3

Lim. Ch. 5

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

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**CHILD DEVELOPMENT**

**CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0133 (Effective Fall 2003 - Summer 2008)

The certificate program prepares individuals for positions as assistant teachers or teachers in child care programs. The curriculum is aligned with the standards issued by the National Association for the Education of Young Children and the Council for Professional Recognition (CDA). Courses for the certificate can be applied toward the associate degree. This curriculum requires three semesters to complete, not including summer. Several semesters of daytime field work in child care settings are required.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

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<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>CHDV 101</td>
<td>Child Growth/Devel: 0-5 Years</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 111</td>
<td>Child Guidance/Communication (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 112</td>
<td>Family Relationships/Child Care</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health/Safety Issues/Child Care</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 168</td>
<td>Caring/Children/Special Needs</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Preschool Curriculum/Learning Env (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>Infant-Toddler Program Dev</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 222</td>
<td>School-Age Child Care Pract Dev</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 254</td>
<td>Child Development Practicum (See Note 2)</td>
<td>5</td>
</tr>
<tr>
<td>WRIT 101</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:**

- Administration 2 Credits
- CHDV 131 Family Child Care Management 2
- CHDV 200 Early Childhood Center Admin 2

**CHOICE 2:**

- Professional Related Courses (See Note 3) 3 Credits
- EMSBS 107 First Aid/CPR/Smart First Aid 5
- HUSE 100 Introduction to Human Services 3
- HUSE 101 Personal Development/Human Serv 3
- HUSE 110 Intro/Child Abuse and Neglect 3
- HUSE 112 Understanding/Substance Abuse 3
- HUSE 120 Introduction/Family Violence 3

**MINIMUM TOTAL**

38

**NOTES:**

1. CHDV 111 and CHDV 220 must be completed with a minimum 2.5 grade or better. Other required CHDV courses must be completed with a minimum 2.0 grade or better.

2. CHDV 264 requires departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 264. Applications for departmental approval are available in the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750.

3. Students may also choose from CHDV-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.

<table>
<thead>
<tr>
<th>CHDV 121</th>
<th>CHDV 112</th>
<th>CHDV 284</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHDV 111</td>
<td>CHDV 113</td>
<td>CHDV 284</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>CHDV 188</td>
<td>Lim.Ch.2</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>CHDV 220</td>
<td>Lim.Ch.2</td>
</tr>
<tr>
<td>WRIT 222</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CDA CREDENTIAL TRAINING**

**CERTIFICATE OF COMPLETION**

Curriculum Code: 0921 (Effective Fall 2003 - Summer 2008)

The CDA (Child Development Associate) Credential is a national credential earned by individuals working with children ages three and younger in a group child care setting. The curriculum is aligned with the standards issued by the Council for Professional Recognition (CDA). The certificate provides the training required for CDA credential assessment. To complete field work requirements, students must be working in a child care setting.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 11 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHDV 101</td>
<td>Child Growth/Devel: 0-5 Years</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 111</td>
<td>Child Guidance/Communication</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 254</td>
<td>CDA Credentialing Preparation (See Note 2)</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:**

- CHDV 220 Preschool Curriculum/Learning Env 4
- CHDV 221 Infant-Toddler Program Dev 4

**MINIMUM TOTAL**

15

**NOTES:**

1. CHDV 111 and CHDV 220 must be completed with a minimum 2.5 grade or better. Other required CHDV courses must be completed with a minimum 2.0 grade or better.

2. Students must be employed or volunteer in an approved child care program with children 5 years of age or younger for at least two half days per week in order to be observed working as a lead caregiver during CHDV 254. See the Application for Department Approval. Applications are available in the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750.

3. Individuals applying for the CDA credential must have 480 hours of experience working with children aged 5 and below in a child care setting.

4. CDA credential assessment is conducted by the Council for Professional Recognition, Washington, D.C., and requires a fee and additional assessment procedures beyond this certificate.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>CHDV 101 Lim.Ch.</th>
<th>Lim.Ch.2</th>
<th>CHDV 254</th>
</tr>
</thead>
</table>

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

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0178 (Effective Fall 2003 - Summer 2006)

Civil engineering technicians apply theory and principles of civil engineering in planning, designing, and overseeing the construction and maintenance of structures and facilities in the highway system. They may work at construction or survey sites, offices or in testing labs with engineers, surveyors, supervisors, managers, or skilled trade workers. The successful civil engineering technician must have a working knowledge of college algebra and trigonometry, civil drafting, communications, construction materials, surveying, and must be computer literate.

Civil engineering technicians work for construction, engineering, and architecture firms, government agencies, mapping agencies, and private petroleum and mining companies.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 482-1306.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 63 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CIVL 101</td>
<td>Civil Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 124</td>
<td>Route Survey</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 131</td>
<td>Traffic Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 132</td>
<td>Construction Materials</td>
<td>5</td>
</tr>
<tr>
<td>CIVL 135</td>
<td>Soils Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 136</td>
<td>Hydrology and Highway Tech</td>
<td>5</td>
</tr>
<tr>
<td>CIVL 200</td>
<td>Civil Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>CIVL 241</td>
<td>Statics/Strength of Materials</td>
<td>5</td>
</tr>
<tr>
<td>GRFT 203</td>
<td>Beginning MicroStation</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
<td>CIVL 120</td>
<td>Surveying</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 124</td>
<td>Route Survey</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 132</td>
<td>Construction Materials</td>
<td>5</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

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>CIVL 101</th>
<th>CIVL 120</th>
<th>CIVL 121</th>
<th>CIVL 132</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 114</td>
<td>CIVL 120</td>
<td>GRFT 200</td>
<td>CIVL 136</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>CIVL 125</td>
<td>MATH 115</td>
<td>CIVL 241</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>CIVL 200</td>
<td>SOCL 120</td>
<td>WRT 124</td>
</tr>
</tbody>
</table>

SURVEYING AND MATERIALS TECH

CERTIFICATE OF COMPLETION

Curriculum Code: 1011 (Effective Fall 2003 - Summer 2006)

This certificate provides students with basic instruction in surveying and materials testing used in the civil engineering industry. Students will develop skills in operating high-tech survey equipment; using computational software; and determining the properties of density, bituminous, and concrete materials used in construction. Graduates of this curriculum are prepared for entry level work in surveying and materials testing.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 17 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CIVL 101</td>
<td>Civil Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 124</td>
<td>Route Survey</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 132</td>
<td>Construction Materials (See Note 1)</td>
<td>5</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

NOTES:
1. Math Level 5 or the completion of MATH 114 with a minimum grade of 3.0 is required to enroll in this course.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>CIVL 101</th>
<th>CIVL 124</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVL 120</td>
<td>CIVL 132</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
CAD/CAM Technician
Associate in Applied Science Degree

Curriculum Code: 0892 (Effective Fall 2003 - Summer 2008)

This curriculum is intended for students planning to pursue a career in mechanical computer-aided design and manufacturing (CAD/CAM). Graduates often seek employment with companies who expect their CAD operators to also be computer numerically controlled (CNC) machine tool path programmers as well as designers. The increase in the level of sophistication of computer-aided design systems has necessitated that the designer assist in the creation of the tool path or support machinists engaged in this task. Responsibilities include graphically representing engineering math data and generating the necessary instructions for computer controlled lathes, mills, and automated machine tools, both manually and electronically. CAD/CAM technicians are employed by manufacturing companies, machine shops, and die design and construction shops in many areas of the automotive, aerospace, and special machinery manufacturing market. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prereq
information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational Technical Center, Room 1380, telephone number (817) 460-1386.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 101</td>
<td>Mechanical Drafting/Basic CAD</td>
<td>4</td>
</tr>
<tr>
<td>CADD 102</td>
<td>Advanced Mechanical Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CADD 103</td>
<td>Geometric Dimension/Tolerance</td>
<td>3</td>
</tr>
<tr>
<td>CADD 104</td>
<td>Descriptive Geometry</td>
<td>4</td>
</tr>
<tr>
<td>CADD 131</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
<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>CNCP 210</td>
<td>Mastercam</td>
<td>4</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machinist Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Test</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workforce</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 3 CREDITS |

<table>
<thead>
<tr>
<th>CODE</th>
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</thead>
<tbody>
<tr>
<td>CADD 101</td>
<td>CADD 102</td>
</tr>
<tr>
<td>CADD 103</td>
<td>CADD 131</td>
</tr>
<tr>
<td>MACH 100</td>
<td>CNCP 101</td>
</tr>
<tr>
<td>MACH 105</td>
<td>MATH 115</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted in the Registrar's Office that is verified within 90 days after a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for the Core area.
2. The Computer Graphics series (CHOICE B, 6 credits) may be replaced by another approved computer graphics software package available through the Computer-Aided Drafting and Design Program. See a Computer-Aided Drafting and Design program advisor for more information.
3. Some prerequisites to courses may be waived based on experience. See an advisor for more information.

SUGGESTED COURSE SEQUENCE

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

Students should maintain a balance between the academic and practical aspects of the program, and should consult with their advisor or counselor before enrolling in any course.
### COMPUTER-AIDED DRAFTING/DESIGN
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0165 (Effective Fall 2003 - Summer 2006)

This program prepares individuals to apply technical knowledge and skills to plan and prepare scale pictorial interpretations of engineering and design concepts. Students receive instruction in the use of precision drawing instruments, computer-assisted design programs, sketching and illustration, and specification interpretation. Proficiency in the use of current computer-aided design packages, up-to-date geometric tolerancing techniques, and descriptive geometry applications is necessary to succeed in the industrial workplace. Employment possibilities include engineering firms, consulting firms, the automotive industry, manufacturers of special machinery, tool and die industry, etc.

### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1360, telephone number (517) 483-1308.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 101</td>
<td>Mechanical Drafting/Basic CAD  (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>CADD 102</td>
<td>Advanced Mechanical Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CADD 103</td>
<td>Geometric Dimension/Tolerance</td>
<td>3</td>
</tr>
<tr>
<td>CADD 104</td>
<td>Descriptive Geometry</td>
<td>4</td>
</tr>
<tr>
<td>CADD 131</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
<tr>
<td>CADD 294</td>
<td>Jigs and Fixture Design</td>
<td>4</td>
</tr>
<tr>
<td>CNCP 101</td>
<td>PC Applications for Technology</td>
<td>3</td>
</tr>
<tr>
<td>MACH 108</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MACH 108</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metalurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>MGMT 294</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

#### CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>Core Area</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area</td>
<td>6</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Writing Core Area</td>
<td>0</td>
</tr>
</tbody>
</table>

#### CHOICE 2: Computer Graphics

<table>
<thead>
<tr>
<th>Subchoice 2A</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD222 AutoCAD Advanced 3-D</td>
<td>4</td>
</tr>
<tr>
<td>CAD233 Autodesk Mechanical Desktop (See Note 4)</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

66
**COMPUTER-AIDED DRAFTING/DISIGN CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0145 (Effective Fall 2003 - Summer 2004)

This curriculum has been identified by local industry as comprising the minimal requirements needed for employment consideration. Students completing this curriculum are eligible to apply for entry-level drafting or computer-aided design (CAD) positions.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Manufacturing and Land Technologies' Department, Gannon Vocational-Technical Center, Room 1360, telephone number (517) 483-1338.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 101</td>
<td>Mechanical Drafting/Basic CAD</td>
<td>4</td>
</tr>
<tr>
<td>CADD 102</td>
<td>Advanced Mechanical Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CADD 103</td>
<td>Geometric Dimension/Tolerance</td>
<td>3</td>
</tr>
<tr>
<td>CADD 104</td>
<td>Descriptive Geometry</td>
<td>4</td>
</tr>
<tr>
<td>CADD 131</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL: 27 CREDITS**

**LIMITED CHOICE REQUIREMENTS**

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

<table>
<thead>
<tr>
<th>CHOICE 1: Computer Graphics (Choose one subchoice. See Note 2)</th>
<th>5 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subchoice 1A</td>
<td></td>
</tr>
<tr>
<td>CADD 232 AutoCAD Advanced 3-D</td>
<td>4</td>
</tr>
<tr>
<td>CADD 233 Autodesk Mechanical Desktop</td>
<td>4</td>
</tr>
<tr>
<td>Subchoice 1B</td>
<td></td>
</tr>
<tr>
<td>CADD 242 Unigraphics Basic</td>
<td>4</td>
</tr>
<tr>
<td>CADD 243 Unigraphics Advanced</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

35

**NOTE:**

1. Basic mechanical drafting skills are necessary to begin this curriculum and may be demonstrated by a score of 60% or better on the Drafting Placement Test or by passing CADD 100 with a 2.5 minimum grade.

2. The Computer Graphics series (8 credits) may be replaced by another approved computer graphics software package available through the CADD Program. See a CADD program advisor for more information.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 101</td>
<td>CADD 102</td>
<td>MACH 100</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>CADD 103</td>
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<tr>
<td>MATH 114</td>
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COMPUTER NETWORK/COMMUNICATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0781 (Effective Fall 2003 - Summer 2008)

Computer networking and communication specialists plan, develop, and admini-
ister networks and communication systems. They may develop applications to be
deployed and oversee the operation of the network. They may provide software
design, and hardware repair and support for the networking infrastructure including database development.

PREREQUISITES
Students should see Catalog Descriptions or Course Offerings for course prereq-
quisite information. See the Assessment and Placement Testing section for skills
assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central
Building, Room 137, telephone number (517) 483-1541.

REQUIREMENTS

<table>
<thead>
<tr>
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<tr>
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<td>CABS 110</td>
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<tr>
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<td>Intro Windows Prog Visual BASIC</td>
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<td>CABS 133</td>
<td>Operating Systems</td>
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<tr>
<td>CABS 230</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
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<td>Commercial Internet Site Mgmt</td>
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<td>CABS 230</td>
<td>Intro to Local Area Networks</td>
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<td>Advanced Local Area Networks</td>
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<td>Microsoft Network Server</td>
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LIMITED CHOICE REQUIREMENTS

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<td>CABS 283</td>
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CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these
requirements. Core area proficiency exams, where appropriate, are available for
each core area.)

<table>
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<td>Wrocarea</td>
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CHOICE 2: Writing

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<td>WRIT 124</td>
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CHOICE 3: Web Programming

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<tbody>
<tr>
<td>CABS 233</td>
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<td>CABS 234</td>
<td>WWW Interactive Programming</td>
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CHOICE 4: Computer Speciality Area (See Note 3)

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<td>CABS 102</td>
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<td>CABS 203</td>
<td>Intro to JAVA Programming</td>
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MINIMUM TOTAL

61

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this
   Core area.
2. Students must complete one course from CHOICE 2 to fulfill the requirements
   for the Core area.
3. Other CABS or CABS-prefix courses may be approved for CHOICE 4 by a
   Computer Information Systems Academic Program advisor.
4. For graduation this program, a student must have earned a minimum of 2.0
   grade in each course with a CABS or CABS 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 trans-
ferred in courses from another school, or have prerequisites to fulfill) should con-
tact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
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<td>CABS 195</td>
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<td>CABS 110</td>
<td>Intro Computer Info Systems</td>
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<td>CABS 102</td>
<td>Internet Literacy</td>
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<td>CABS 116</td>
<td>Intro Windows Prog Visual BASIC</td>
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<td>Operating Systems</td>
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<td>Info Sys Tech/Problem Solving</td>
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<td>CABS 203</td>
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<td>Advanced Local Area Networks</td>
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<tr>
<td>CABS 283</td>
<td>Microsoft Network Server</td>
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<td>ISCI 101</td>
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<tr>
<td>MATH 119</td>
<td>Investigations with Math</td>
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<tr>
<td>QADM 275</td>
<td>Cultural Differences in Business</td>
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</table>
COMPUTER NETWORK/COMMUNICATION
CERTIFICATE OF COMPLETION

Curriculum Code: CS 042 (Effective Fall 2003 - Summer 2006)

This certificate provides students with the upper level technical skills necessary to plan, develop, and administer network and communications systems. It is designed for students who already have basic computer skills and want to specialize in computer networking. This course work will apply toward completion of the Computer Networking/Communication Associate in Business.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<td>Intro Computer Info Systems</td>
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<td>Data Communications</td>
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<td>CISB 133</td>
<td>Operating Systems</td>
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<tr>
<td>CISB 229</td>
<td>Intro to Local Area Networks</td>
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<td>CISB 231</td>
<td>Advanced Local Area Networks</td>
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<td>CISB 232</td>
<td>Microsoft Network Server</td>
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<tr>
<td>CISB 254</td>
<td>Linux/UNIX Operating System</td>
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TOTAL: 21 CREDITS

LIMITED CHOICE REQUIREMENTS

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

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<tr>
<th>CHOICE 1: Computer Specialty Area</th>
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<tr>
<td>CABS 110: Intro to Microsoft Office</td>
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<td>CABS 210: Advanced Microsoft Office</td>
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<td>CISB 122: Adv Windows Prog Visual BASIC</td>
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<td>CISB 137: Introduction to Oracle, SQL</td>
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<td>CISB 160: Intro to C/C++ Program for Bus</td>
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</tr>
<tr>
<td>CISB 235: Microcomputer Hardware Support</td>
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<tr>
<td>CISB 236: Microcomputer Software Support</td>
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</tr>
<tr>
<td>CISB 247: Microcomputer Project</td>
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<td>CISB 250: Database Concepts</td>
<td>3</td>
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<tr>
<td>CISB 260: Systems Analysis and Design</td>
<td>4</td>
</tr>
<tr>
<td>CISB 281: Visual C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CISB 283: Intro to JAVA Programming</td>
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</table>

TOTAL: 5 CREDITS

MINIMUM TOTAL: 27

NOTES:
1. Prerequisites may be waived based on experience. See an Information Technology program advisor prior to registration for more information.
2. Students must complete each CABS and CISB course with a minimum grade of 2.2 to receive this certificate of completion.

SUGGESTED COURSE SEQUENCE

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

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COMPUTERS

2003-2005 Catalog Lansing Community College

www.lcc.edu

COMPUTER PROGRAMMER/ANALYST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0113 (Effective Fall 2003 - Summer 2008)

Programm/analyst 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. 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

<table>
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<td>Intro Computer Info Systems</td>
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<td>CISB 102</td>
<td>Internet Literacy</td>
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<td>CISB 114</td>
<td>Programming Logic</td>
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<td>CABS 150</td>
<td>Data Communications</td>
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<td>Info Sys Tech/Problem Solving</td>
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<td>Database Concepts</td>
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LIMITED CHOICE REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas
3 Credits
(See General Education Core Requirements for instruction on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area
  3 Credits
- Global Perspectives and Diversity Core Area (See Note 1)
  6 Credits
- Mathematics Core Area (See Note 1)
  6 Credits
- Science Core Area (See Note 1)
  0 Credits
- Writing Core Area (See Note 2)
  0 Credits

CHOICE 2: Programming Tracks (Choose two subchoices) 14 Credits

Subchoice 2A: Visual Basic Programming Track
- CISB 195 | Intro Windows Prog Visual BASIC | 4 |
- CISB 122 | Adv Windows Prog Visual BASIC | 3 |

Subchoice 2B: C Programming Track
- CISB 150 | Intro to C/C++ Program for Bus | 3 |
- CISB 280 | Adv C/C++ Program with OOP | 4 |

Subchoice 2C: COBOL Programming Track
- CISB 177 | COBOL I | 4 |
- CISB 270 | COBOL II | 3 |

Subchoice 2D: Internet Programming Track
- CISB 253 | WWW Interactive Programming | 4 |
- CISB 289 | Intro to JAVA Programming | 3 |

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students must complete one course from CHOICE 2 to fulfill the requirements for this Core area.
3. For graduation from this program, a student must have earned a minimum 2.0 grade in each course with a CABS or CISB prefix.

SUGGESTED COURSE SEQUENCE

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

Students are responsible for completing all REQUIREMENTS as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when transcripts are ordered for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

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COMPUTER PROGRAMMER/ANALYST
CERTIFICATE OF COMPLETION

Curriculum Code: 0969 (Effective Fall 2003 - Summer 2008)

This certificate provides students with the entry-level skills to perform as a computer programmer of business applications in one language. It is designed for students who already have basic computer skills. Course work may be applied toward completion of the Computer Programmer/Analyst Associate in Business.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1556.

REQUIREMENTS
TOTAL: 20 CREDITS

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</tr>
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<td>CISB 119</td>
<td>Intro Windows Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 122</td>
<td>Adv Windows Prg Visual BASIC</td>
<td>3</td>
</tr>
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<td>CISB 230</td>
<td>Database Concepts</td>
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</tr>
<tr>
<td>CISB 260</td>
<td>Systems Analysis and Design</td>
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LIMITED CHOICE REQUIREMENTS
TOTAL: 3-4 CREDITS

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

CHOICE 1: Business Related Electives
ACCG 100 Practical Accounting Non-Major
ADG 110 Principles of Accounting
BUSN 118 Introduction to Business

MINIMUM TOTAL: 23 CREDITS

NOTES:
1. Prerequisites may be waived based on experience. See an Information Technology program advisor prior to registration for more information.
2. Students must complete each CISB course with a minimum grade of 2.0 to receive this certificate of completion.

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

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</tbody>
</table>

COMPUTER REPAIR TECHNICIAN
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0166 (Effective Fall 2003 - Summer 2004)

This program provides technical knowledge and skills to repair and service computers, related computer and computer components, and diagnose causes of malfunctions. Individuals are prepared for entry-level positions. This certificate will be able to be used toward the associate degree curriculum that is currently under development in the Computer Information Technology Program. Students should contact a CIT Program advisor at (517) 483-1556 for information.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1556.

REQUIREMENTS
TOTAL: 25 CREDITS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>ELCT 102</td>
<td>Schematic Drawing</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 169</td>
<td>Logic Problems Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 161</td>
<td>Soldering/Desoldering</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 170</td>
<td>Computer Repair Electronics I</td>
<td>6</td>
</tr>
<tr>
<td>ELCT 171</td>
<td>Computer Repair Electronics II</td>
<td>6</td>
</tr>
<tr>
<td>ELCT 175</td>
<td>Computer Troubleshooting</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 180</td>
<td>Computer Test Equipment I</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 181</td>
<td>Computer Test Equipment II</td>
<td>2</td>
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</tbody>
</table>

LIMITED CHOICE REQUIREMENTS
TOTAL: 6 CREDITS

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

CHOICE 1: Software
CASB 195 Microsoft Windows
CISB 107 DOS Management
CISB 136 Data Communications
CISB 132 Operating Systems
CISB 250 Intro to Local Area Networks

MINIMUM TOTAL: 31 CREDITS

NOTE:
1. Students interested in using this certificate toward an associate degree in Computer Information Technology should contact a CIT Program advisor at (517) 483-1556.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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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</thead>
<tbody>
<tr>
<td>ELCT 106</td>
<td>ELCT 171</td>
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<td>ELCT 166</td>
<td>ELCT 175</td>
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<td>ELCT 181</td>
</tr>
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<td>ELCT 176</td>
<td>Lim.Chr.</td>
</tr>
<tr>
<td>ELCT 186</td>
<td>Lim.Chr.</td>
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</table>
## COMPUTER SECURITY AND CONTROLS
### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0253 (Effective Fall 2003 - Summer 2008)

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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 465-1546.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 51 CREDITS</th>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 250</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 133</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 137</td>
<td>Introduction to Oracle, SQL</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 170</td>
<td>COBOL I</td>
<td>4</td>
</tr>
<tr>
<td>CSIS 230</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 250</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 255</td>
<td>Systems Analysis and Design</td>
<td>4</td>
</tr>
<tr>
<td>CSIS 270</td>
<td>COBOL II</td>
<td>3</td>
</tr>
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</table>

### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: General Education Core Areas

- **15-20 Credits**
  
  (See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

  - Communication Core Area
    - 3
  - Global Perspectives and Diversity Core Area
    - 3-4
  - Mathematics Core Area
    - 3-4
  - Science Core Area
    - 4-5
  - Writing Core Area
    - 3-4

  **MINIMUM TOTAL**

  57

**NOTE:**

1. For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CSIS and ACGG prefix.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
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<th>I</th>
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<th>IV</th>
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</thead>
<tbody>
<tr>
<td>ACGG 210</td>
<td>ACGG 211</td>
<td>ACGG 220</td>
<td>ACGG 221</td>
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<tr>
<td>CSIS 100</td>
<td>CSIS 137</td>
<td>CSIS 133</td>
<td>CSIS 250</td>
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</tr>
<tr>
<td>CSIS 114</td>
<td>CSIS 170</td>
<td>CSIS 230</td>
<td>Lim.Ch.</td>
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</tr>
<tr>
<td>CSIS 130</td>
<td>CSIS 266</td>
<td>CSIS 270</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INFO TECHNOLOGY JOB READINESS
CertiFICATE OF COMPLETION

Curriculum Code: 1039 (Effective Fall 2003 - Summer 2006)

This certificate is designed for individuals wishing to gain basic technology skills for entry-level positions in the workforce. Students will learn the basics of the Microsoft Windows operating system, Microsoft Office productivity tools, basic business communication skills, and employability skills.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>TOTAL: 9 CREDITS</th>
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<tbody>
<tr>
<td>CABS 106</td>
<td>Microsoft Windows</td>
<td></td>
</tr>
<tr>
<td>CISB 109</td>
<td>Intro Computer Info</td>
<td></td>
</tr>
<tr>
<td>CABS 105</td>
<td>Employability Skills</td>
<td></td>
</tr>
<tr>
<td>CABS 106</td>
<td>Keyboarding Basics</td>
<td></td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Business Related
- BUSINESS 110: Introduction to Business - 3 Credits
- CABS 203: Professional Office Procedures - 3 Credits

CHOICE 2: Writing
- WRIT 114: Business English - 3 Credits
- WRIT 127: Business Writing - 3 Credits

CHOICE 3: Computer Related (Choose one subchoice)
- Subchoice 3A: CABS 106: Intro to Microsoft Office - 3 Credits
- Subchoice 3B: CABS 115: Microsoft Word - 3 Credits
- CABS 126: Excel - 3 Credits

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.

CABS 106: Lim.Ch.1
CABS 109: Lim.Ch.2
CABS 105: Lim.Ch.3
CABS 106: Lim.Ch.3

INFORMATION TECHNOLOGY BASICS
CertiFICATE OF COMPLETION

Curriculum Code: 0844 (Effective Fall 2003 - Summer 2006)

This certificate provides the basic classes for Computer Information Systems Associate in Business degrees. Students will learn introductory concepts of computer usage in business. This certificate can be completed entirely online. This course work will apply toward completion of an Associate Degree in Business in the areas of Computer Networking/Communications, Microcomputer Database Specialties, or Computer Programmer/Analyst.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

<table>
<thead>
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<th>COURSE</th>
<th>TITLE</th>
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<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td></td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info</td>
<td></td>
</tr>
<tr>
<td>CABS 114</td>
<td>Programming Logic</td>
<td></td>
</tr>
<tr>
<td>CISB 133</td>
<td>Data Communications</td>
<td></td>
</tr>
<tr>
<td>CISB 133</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td></td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Writing
- WRIT 121: Composition I - 4 Credits
- WRIT 124: Technical Writing - 3 Credits

MINIMUM TOTAL: 20 CREDITS

NOTE:
1. Students must complete each CABS and CISB course with a minimum grade of 2.0 to receive this certificate of completion.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 195</td>
<td>CISB 130</td>
</tr>
<tr>
<td>CISB 100</td>
<td>CISB 133</td>
</tr>
<tr>
<td>CISB 114</td>
<td>CISB 200</td>
</tr>
</tbody>
</table>
INTERNET FOR BUSINESS
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0794 (Effective Fall 2003 - Summer 2008)

This program provides students with technical knowledge and skills to use the Internet, the global network which links computer users and information on a world-wide scale. Students will learn how to maximize the use of Internet and World Wide Web resources. Emphasis in this program is on business applications. Course work may be applied toward completion of the Computer Network/Communications Associate in Business degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
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<tr>
<td>CSBS 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSBS 102</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CSBS 119</td>
<td>Intro Window Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CSBS 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CSBS 203</td>
<td>Developing Pages for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CSBS 204</td>
<td>Commercial Internet Site Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Busn</td>
<td>3</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 9-11 CREDITS |

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

CHOICE 1: Programming

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSBS 252</td>
<td>WWW Interactive Programming</td>
<td>4</td>
</tr>
<tr>
<td>CSBS 283</td>
<td>Intro to JAVA Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

CHOICE 2: Speech Communication (See Note 2)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
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</table>

CHOICE 3: Writing (See Note 3)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>WRIT 121</td>
<td>Composition 1</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

33

NOTES:
1. For graduation from this program, a student must have earned a minimum grade of 2.0 in each course with CABS and CSBS prefixed.
2. Students completing CHOICE 2 will fulfill the LCC General Education Communication Core Area requirement for an associate degree.
3. Students completing CHOICE 3 will fulfill the LCC General Education Writing Core Area requirement for an associate degree.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>CABS 105</td>
<td>CSBS 102</td>
<td>CSBS 203</td>
<td>CSBS 204</td>
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<tr>
<td>CSBS 100</td>
<td>CSBS 119</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>OADM 275</td>
<td>CSBS 130</td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.2</td>
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</table>

INTERNET FOR BUSINESS
CERTIFICATE OF COMPLETION

Curriculum Code: 0843 (Effective Fall 2003 - Summer 2008)

This certificate provides students with the technical skills necessary to use the Internet in an effective business resource, including building and maintaining commercial web-sites. It is designed for students who already have basic computer skills and want to specialize in Internet and web programming. This course work will apply toward completion of the Computer Network/Communications Associate in Business degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<tr>
<td>CSBS 102</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CSBS 119</td>
<td>Intro Window Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CSBS 203</td>
<td>Developing Pages for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CSBS 204</td>
<td>Commercial Internet Site Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Busn</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 5-4 CREDITS |

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

CHOICE 1: Programming Elective

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CSBS 252</td>
<td>WWW Interactive Programming</td>
<td>4</td>
</tr>
<tr>
<td>CSBS 283</td>
<td>Intro to JAVA Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

22

NOTES:
1. Prerequisites may be waived based on experience. See an Information Technology program advisor prior to registration for more information.
2. Students must complete each CSBS course with a minimum grade of 2.0 to receive this certificate of completion.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSBS 100</td>
<td>CSBS 102</td>
<td>CSBS 203</td>
<td>CSBS 204</td>
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<tr>
<td>CSBS 119</td>
<td>Lim.Ch.</td>
<td>CSBS 203</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.1</td>
<td>Lim.Ch.2</td>
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</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is noticed when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
MICROCOMP DATABASE SPECIALIST ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0922 (Effective Fall 2003 - Summer 2008)

As the Information Age matures, decisions at all levels of an organization are based upon relevant information. Organizations seek specialists who can plan for and accomplish the acquisition and retrieval of needed information. Those specialists must be able to determine information requirements of users; use technology systems and processes to devise means through which to gather and sort needed information; and implement effective solutions for reporting necessary information using industry-standard database tools. Even in large organizations, these solutions frequently involve the use of microcomputers to create the required input screens or output reports. Data for these systems can come from a networked and/or stand-alone environment. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<tr>
<td>CAB 133</td>
<td>Microsoft Access Database</td>
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<tr>
<td>CAB 232</td>
<td>Advanced Microsoft Access</td>
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</tr>
<tr>
<td>CAB 234</td>
<td>Programming Microsoft Access</td>
<td>3</td>
</tr>
<tr>
<td>CISB 150</td>
<td>Intro Condutor Info Systems</td>
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<tr>
<td>CISB 119</td>
<td>Intro Window Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 122</td>
<td>Adv Windows Prog Visual BASIC</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 139</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 137</td>
<td>Introduction to Oracle: SQL</td>
<td>3</td>
</tr>
<tr>
<td>CISB 138</td>
<td>Oracle PL/SQL Program Units</td>
<td>3</td>
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<tr>
<td>CISB 147</td>
<td>Oracle Build Internet Apps I</td>
<td>3</td>
</tr>
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<td>CISB 148</td>
<td>Oracle Build Internet Apps II</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tch/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 250</td>
<td>Database Concepts</td>
<td>3</td>
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<td>MATH 119</td>
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<td>OADM 275</td>
<td>Cultural Differences in Business</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 General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 1) 0 Credits
- Global Perspectives and Diversity Core Area (See Note 2) 0 Credits
- Mathematics Core Area (See Note 2) 0 Credits
- Science Core Area (See Note 2) 0 Credits
- Writing Core Area (See Note 3) 0 Credits

CHOICE 2: Communication
- SPCH 110 Oral Communic in the Workplace 3 Credits
- SPCH 120 Dynamics of Communication 3 Credits

CHOICE 3: Writing
- WRIT 121 Composition I 4 Credits
- WRIT 124 Technical Writing 3 Credits
- WRIT 127 Business Writing 3 Credits

MINIMUM TOTAL 65 Credits

NOTES:
1. Students must complete one course from CHOICE 2 to fulfill the requirements for this Core area.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students must complete one course from CHOICE 3 to fulfill the requirements for this Core area.
4. For graduation, a student must earn a minimum 2.0 grade in all courses.

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

<table>
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<td>CAB 133</td>
<td>CAB 232</td>
<td>CAB 234</td>
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<td>MATH 119</td>
<td>Lim,Ch.3</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is witnessed when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
MICROCOMP DATABASE SPECIALIST
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0917 (Effective Fall 2003 - Summer 2008)

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

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<tr>
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<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<td>CABS 202</td>
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<td>3</td>
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<tr>
<td>CISB 137</td>
<td>Intro to Oracle; SQL</td>
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<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 250</td>
<td>Database Concepts</td>
<td>3</td>
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TOTAL: 27 CREDITS

LIMITED CHOICE REQUIREMENTS

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

| CHOICE 1: Computer Specialty Area (See Note 1) | 5 Credits |
| CABS 195 | Microsoft Windows         | 2         |
| CISB 119 | Intro Win/Prog Visual BASIC | 4        |
| CISB 133 | Operating Systems         | 3         |
| CISB 138 | Oracle PL/SQL Program Units | 3     |
| CISB 147 | Oracle Build Internet Apps I | 3       |
| CISB 148 | Oracle Build Internet Apps II | 3      |
| CISB 230 | Intro to Local Area Networks | 3      |

MINIMUM TOTAL 33

NOTES:
1. Other CABS or CISB-prefix courses may be approved for CHOICE 1 by an Information Technology program advisor.
2. For graduation, a student must have earned a minimum 2.0 grade in all courses.

SUGGESTED COURSE SEQUENCE

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

CABS 133 CABS 234
CABS 232 CISB 104
CISB 100 CISB 130
CISB 114 CISB 200
CISB 137 CISB 250
Lim Ch 1 Lim Ch 1

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

Curriculum Code: 0712 (Effective Fall 2003 - Summer 2006)

Microcomputer support specialists install, modify and make minor repairs to microcomputer hardware and software systems and provide technical assistance and training to system users. They install or assist service personnel in installation of hardware and peripheral components, such as monitors, keyboards, printers, and disk drives on user's premises, following design or installation specifications. They may also load software packages into the computer, instruct users in use of equipment, software, and manuals; answer clients' inquiries concerning the system operation; and diagnose system hardware, software, and operator problems.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number 483-1546.

REQUIREMENTS
TOTAL: 51 CREDITS

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<td>Word for Windows</td>
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<td>CABS 126</td>
<td>Excel</td>
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<td>Microsoft Access Database</td>
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<td>CABS 182</td>
<td>Microsoft PowerPoint</td>
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<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
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<td>CISB 100</td>
<td>Intro to Computer Info Systems</td>
<td>3</td>
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<tr>
<td>CISB 101</td>
<td>Internet Literacy</td>
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<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
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<td>CISB 130</td>
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<td>CISB 133</td>
<td>Operating Systems</td>
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<td>CISB 230</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
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<tr>
<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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<td>ISCI 131</td>
<td>Integrated Science - Physical</td>
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<td>MATH 119</td>
<td>Investigations with Math</td>
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<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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LIMITED CHOICE REQUIREMENTS
TOTAL: 15-17 CREDITS

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

CHOICE 1: General Education Core Area
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area: 3 Credits
- Global Perspectives and University Core Area (See Note 1): 5 Credits
- Mathematics Core Area (See Note 1): 0 Credits
- Science Core Area (See Note 1): 0 Credits
- Writing Core Area (See Note 2): 0 Credits

CHOICE 2: Writing

- WRIT 121: Composition I: 4 Credits
- WRIT 124: Technical Writing: 3 Credits

CHOICE 3: Computer Related (See Note 3): 6 Credits

- CABS 126: Excel Advanced: 3 Credits
- CABS 133: Desktop Publishing PageMaker: 3 Credits
- CABS 219: Advanced Microsoft Word: 3 Credits
- CABS 232: Advanced Microsoft Access: 2 Credits
- CABS 234: Programming Microsoft Access: 3 Credits
- CISB 203: Developing Web Pages: 3 Credits
- CISB 231: Advanced Local Area Networks: 3 Credits
- CISB 247: Computer Project: 2 Credits
- CISB 250: Database Concepts: 3 Credits
- CISB 250: Systems Analysis and Design: 4 Credits

CHOICE 4: Accounting

- ACGG 100: Principles of Accounting: 3 Credits
- ACGG 101: Accounting: 4 Credits

MINIMUM TOTAL: 66

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students must complete one course from CHOICE 2 to fulfill the requirements for this Core area.
3. Students may also select from any course with a CABS or CISB prefix not already used to meet degree requirements.
4. For graduation, a student must have earned a minimum 2.0 grade in each course with a CABS and CISB prefix.

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

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<td>CISB 103</td>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>OADM 275</td>
<td>Lim.Ch.</td>
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</table>
MOUSE MASTER CERTIFICATION PREP
CERTIFICATE OF COMPLETION

Curriculum Code: 0941 (Effective Fall 2003 - Summer 2008)

This certificate will prepare students for the Microsoft Office User Specialist exam. A comprehensive Master Certification is available from Microsoft for those who wish to demonstrate the breadth of their ability by obtaining expert certifications on Word and Excel, and core certifications in PowerPoint, Access, and Outlook.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<td>CABS 126</td>
<td>Excel</td>
<td>3</td>
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<td>CABS 128</td>
<td>Excel-Advanced</td>
<td>3</td>
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<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>3</td>
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<tr>
<td>CABS 176</td>
<td>Microsoft Outlook</td>
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<td>CABS 182</td>
<td>Microsoft PowerPoint</td>
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</tr>
<tr>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
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MINIMUM TOTAL 20 CREDITS

NOTE:
1. Students must complete these courses with a minimum grade of 2.0 to receive this certificate of completion.

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

PC PRODUCTIVITY APPLICATIONS
CERTIFICATE OF COMPLETION

Curriculum Code: 0765 (Effective Fall 2003 - Summer 2008)

This certificate of completion is designed for students with previous experience in the Computer Information Systems field and who wish to upgrade their skills in the area of Productivity Applications.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<td>CABS 126</td>
<td>Excel</td>
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<td>CABS 128</td>
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<td>CABS 133</td>
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<td>CABS 182</td>
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<td>CABS 195</td>
<td>Microsoft Windows</td>
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<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
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<td>CABS 234</td>
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<tr>
<td>CABS 114</td>
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<tr>
<td>CABS 114</td>
<td>Programming Logic</td>
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MINIMUM TOTAL 28 CREDITS

NOTE:
1. A minimum 2.0 grade in each course with a CABS or CISB prefix is required for this certificate.

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

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<tr>
<th>CABS 119</th>
<th>CABS 126</th>
<th>CABS 128</th>
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</table>

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

Curriculum Code: 0766 (Effective Fall 2003 - Summer 2004)

This certificate of completion is designed for students with previous experience in the Computer Information Systems field and who wish to update their skills in the area of Microcomputer Support.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

REQUIREMENTS

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<td>Intro Computer Info Systems</td>
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<td>CISB 130</td>
<td>Data Communications</td>
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<td>CISB 133</td>
<td>Operating Systems</td>
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<td>CISB 230</td>
<td>Intro to Local Area Networks</td>
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<td>CISB 235</td>
<td>Microcomputer Hardware Support</td>
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<td>CISB 236</td>
<td>Microcomputer Software Support</td>
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TOTAL: 20 CREDITS

MINIMUM TOTAL: 20

NOTE:
1. A minimum 2.0 grade in each course with a CABS or CISB prefix is required for this certificate.

SUGGESTED COURSE SEQUENCE

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

CHOOSE ONE:
1. Multimedia
   - CISB 195: Intro Computer Info Systems
   - CISB 133: Operating Systems
   - CISB 230: Intro to Local Area Networks
   - CISB 235: Microcomputer Hardware Support
   - CISB 236: Microcomputer Software Support

TOTAL: 21 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1:
1. Multimedia
   - CISB 223: WWW Interactive Programming
   - CISB 233: Intro to JAVA Programming

MINIMUM TOTAL: 24

NOTE:
1. A minimum 2.0 grade in each course with a CABS or CISB prefix is required for this certificate.

SUGGESTED COURSE SEQUENCE

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

CHOOSE ONE:
1. Multimedia
   - CISB 195: Intro Computer Info Systems
   - CISB 133: Operating Systems
   - CISB 230: Intro to Local Area Networks
   - CISB 235: Microcomputer Hardware Support
   - CISB 236: Microcomputer Software Support

TOTAL: 3-4 CREDITS
RESIDENTIAL BUILDING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0167 (Effective Fall 2003 - Summer 2008)

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 trade skills, understand construction methods and techniques, and know the proper use of building materials. Students will be prepared to obtain a Residential Builder's License or a Maintenance and Alteration Contractor's License. This program also assists students in preparing for the Michigan Builder's License Exam which is administered by the National Assessment Institute and the State of Michigan. This program does not lead to journeyman status.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 1881, telephone number (517) 483-1236.

REQUIREMENTS

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<td>Introduction to Construction</td>
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<td>Structural Blueprint Reading</td>
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<td>BLDT 124</td>
<td>Remodeling, Shingling/Siding</td>
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<td>BLDT 126</td>
<td>Interior Carpenter</td>
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<td>BLDT 262</td>
<td>Builder's Business License</td>
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<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
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<td>BLDT 281</td>
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<td>PHYS 120</td>
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LIMITED CHOICE REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

0 Credits

[See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.]

Communication Core Area (See Note 1) 0
Global Perspectives and Diversity Core Area (See Note 1) 0
Mathematics Core Area (See Note 1) 0
Science Core Area (See Note 1) 0
Writing Core Area (See Note 1) 0

CHOICE 2: Building Business Related

5 Credits

ACCS 100 Practical Accounting Non-Major 3
ARCH 278 Building Science 4
ARCH 283 Materials of Construction 4
BLDT 101 Basic Woodworking 2
BLDT 125 Residential Building Intern 2
BUSN 118 Introduction to Business 3
CIVL 120 Surveying 4

MINIMUM TOTAL 61

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

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>BLDT 281</td>
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<tr>
<td>MATH 114</td>
<td>PHYS 120</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>WRIT 124</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RESIDENTIAL BUILDING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0135 (Effective Fall 2003 - Summer 2008)

This certificate consists of practical, hands-on courses that prepare an individual for the job market with just one year of training. This program does not lead to journeyman status.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 30 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 102</td>
<td>Structural Blueprint Reading</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing</td>
</tr>
<tr>
<td>BLDT 124</td>
<td>Remodeling, Shingling/Siding</td>
</tr>
<tr>
<td>BLDT 126</td>
<td>Interior Carpenter</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>M1 Residential &amp; Bldg Codes</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 30

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>BLDT 103</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>BLDT 124</td>
</tr>
<tr>
<td>BLDT 126</td>
<td>BLDT 277</td>
</tr>
<tr>
<td>MATH 114</td>
<td>BLDT 281</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0103 (Effective Fall 2003 - Summer 2008)

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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 37 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUSN</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CULA</td>
<td>Credit Union Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Intro Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Credit and Collections</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 24-27 CREDITS</th>
</tr>
</thead>
</table>

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

CHOICE 1: General Education Core Areas
7-9 Credits
(Note General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>7-9 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUSJ</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>Principles of Economics-Micro</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>INSU</td>
<td>Principles of Risk and Insurance</td>
<td>3</td>
</tr>
<tr>
<td>LABR</td>
<td>Intro to Labor Relations</td>
<td>1</td>
</tr>
<tr>
<td>LASR</td>
<td>Employment Law for Managers</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Managing/Continual Improvement</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Organizational Development</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Human Resource Mgmt Skills</td>
<td>3</td>
</tr>
<tr>
<td>MKTG</td>
<td>Market/Manage Your Profess Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG</td>
<td>Consumer Behavior</td>
<td>2</td>
</tr>
<tr>
<td>REAL</td>
<td>Real Estate Financing</td>
<td>3</td>
</tr>
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</table>

CHOICE 2: Management Related
13 Credits

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>13 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUSN</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CULA</td>
<td>Credit Union Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Intro Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Credit and Collections</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 21

SUGGESTED COURSE SEQUENCE

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students should confer with a Business Department program advisor to ensure that selection of Limited Choice courses will best fit their career plans.
3. Choose CABS-prefix courses of 110 or above and/or C22-prefix courses of 110 or above not already used to meet degree requirements.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 37 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUSN</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CULA</td>
<td>Credit Union Accounting</td>
<td>3</td>
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<tr>
<td>CUMA</td>
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<td>SPCH</td>
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<td>3</td>
</tr>
<tr>
<td>WRIT</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

CREDIT UNION MANAGEMENT CERTIFICATE OF COMPLETION

Curriculum Code: 0151 (Effective Fall 2003 - Summer 2008)

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>
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<tr>
<td>CULA</td>
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<tr>
<td>CUMA</td>
<td>Intro Credit Union Operations</td>
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</tr>
<tr>
<td>CUMA</td>
<td>Credit and Collections</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>3 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CULA</td>
<td>Credit Union Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Intro Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Credit and Collections</td>
<td>3</td>
</tr>
<tr>
<td>CUMA</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 21

SUGGESTED COURSE SEQUENCE

LANSING COMMUNITY COLLEGE CATALOG 2003-2005
**CORRECTIONAL OFFICER CERTIFICATE OF COMPLETION**

Curriculum Code: 0840 (Effective Fall 2003 - Summer 2008)

This certificate option is designed to provide entry level skills for the person who wishes to enter the job market as a State Correctional Officer at a correctional facility. This curriculum meets the State of Michigan Corrections Officer Vocational Certificate requirements.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Public Service Careers Department, Old Central Building, Room 232, telephone number (517) 483-1570.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>C#</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1US 131</td>
<td>Introduction to Corrections</td>
<td>3</td>
</tr>
<tr>
<td>C1US 195</td>
<td>Legal Issues in Corrections</td>
<td>3</td>
</tr>
<tr>
<td>C1US 250</td>
<td>Correctional Institutions</td>
<td>3</td>
</tr>
<tr>
<td>C1US 251</td>
<td>Correctional Clients</td>
<td>3</td>
</tr>
<tr>
<td>C1US 255</td>
<td>Human Relations/Criminal Justice</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

15

**NOTES:**

1. Students must complete each of these courses with a minimum 2.0 grade to receive this certificate of completion as well as the Michigan Corrections Officer Vocational Certificate.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>C#</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1US 131</td>
<td>C1US 135</td>
</tr>
<tr>
<td>C1US 250</td>
<td>C1US 251</td>
</tr>
<tr>
<td></td>
<td>C1US 255</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0170 (Effective Fall 2003 - Summer 2006)

This degree program prepares an individual for a career as a probation or parole officer, corrections officer, halfway house administrator, jail corrections officer, or juvenile corrections professional. To fulfill requirements for this degree, students may choose to complete either the Correctional Officer Vocational Certificate option or the Juvenile Care Worker Certificate option. The Correctional Officer option meets Michigan Corrections Officers Training Council standards. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Public Service Careers Department, Old Central Building, Room 252, telephone number (517) 483-1570.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 31 CREDITS</th>
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<tbody>
<tr>
<td>Code</td>
<td>Title</td>
</tr>
<tr>
<td>CISS 100</td>
<td>Intro to Computer Info Systems</td>
</tr>
<tr>
<td>CIJS 101</td>
<td>Intro to Criminal Justice</td>
</tr>
<tr>
<td>CIJS 102</td>
<td>Intro to Juvenile Justice</td>
</tr>
<tr>
<td>CJUS 134</td>
<td>Probation and Parole</td>
</tr>
<tr>
<td>CJUS 243</td>
<td>Report Writing in CJ</td>
</tr>
<tr>
<td>LEGL 100</td>
<td>Critical Thinking In Law</td>
</tr>
<tr>
<td>PSY 100</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>SOC 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Commun in the Workplace</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>LIMITED CHOICE REQUIREMENTS</th>
<th>TOTAL: 34-39 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete the indicated number of credits from each CHOICE listed below.</td>
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</tbody>
</table>

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJUS 101</td>
<td>Communication Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>CIJS 101</td>
<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>CJJS 200</td>
<td>Science Core Area</td>
<td>3</td>
</tr>
<tr>
<td>CJUS 255</td>
<td>Writing Core Area (See Note 1)</td>
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<tr>
<td>Total</td>
<td></td>
<td>7-9</td>
</tr>
</tbody>
</table>

CHOICE 2: Corrections Specialization (Choose one subchoice) | 15 Credits

Subchoice 2A: Correctional Officer Vocational Certificate

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJJS 101</td>
<td>Legal Issues in Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 200</td>
<td>Correctional Institutions</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 251</td>
<td>Correctional Dinners</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 255</td>
<td>Human Relations/Criminal Just</td>
<td>3</td>
</tr>
</tbody>
</table>

Subchoice 2B: Juvenile Care Worker Certificate

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIJS 101</td>
<td>Juvenile Offenders/Their Fam</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 101</td>
<td>Juvenile Residential Services</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 297</td>
<td>Juvenile Internship</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services</td>
<td>3</td>
</tr>
</tbody>
</table>

CHOICE 3: Related Professional Courses (See Note 4) | 12-15 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIJS 267</td>
<td>Child Guidance/Communication</td>
<td>4</td>
</tr>
<tr>
<td>CIJS 102</td>
<td>Crime Causes and Conditions</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 101</td>
<td>Juvenile Offenders/Their Fam</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 130</td>
<td>Local Dist</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 204</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 295</td>
<td>Felonies into the 21st Century</td>
<td>3</td>
</tr>
<tr>
<td>CJJS 254</td>
<td>Unarmed Defender</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 293</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 110</td>
<td>Child Abuse and Neglect</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 304</td>
<td>Understanding/Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 292</td>
<td>Juvenile Substance Abuse, Spec Prop/Adv</td>
<td>3</td>
</tr>
<tr>
<td>PSY 103</td>
<td>Psychology of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY 103</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 103</td>
<td>Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY 103</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 103</td>
<td>Adolescent Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 103</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 103</td>
<td>Contemporary Social Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 55

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students completing these courses with a minimum 2.0 grade in each class will receive the Michigan Corrections Officers Vocational Certificate.
3. Students completing the five courses in subchoice 2B and CIJS 100, CJJS 103, PSY 103, and WRIT 124 with a minimum 2.0 grade in each course will receive the Juvenile Care Worker Certificate, which is endorsed by the Michigan Juvenile Detention Association.
4. Students following the Correctional Officer option shall select courses with a CJJS or SOC course. Students following the Juvenile Care Worker option shall select courses with a CJJS or SOC course.

SUGGESTED COURSE SEQUENCE

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

Subchoice 2A: Correctional Officer Vocational Certificate

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJJS 101</td>
<td>CJJS 101</td>
<td>12</td>
</tr>
<tr>
<td>CJJS 103</td>
<td>CJJS 103</td>
<td>12</td>
</tr>
<tr>
<td>LEGL 100</td>
<td>LEGL 100</td>
<td>12</td>
</tr>
<tr>
<td>SOC 120</td>
<td>SOC 120</td>
<td>12</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>WRIT 124</td>
<td>12</td>
</tr>
</tbody>
</table>

Subchoice 2B: Juvenile Care Worker Certificate

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJJS 101</td>
<td>CJJS 101</td>
<td>12</td>
</tr>
<tr>
<td>CJJS 103</td>
<td>CJJS 103</td>
<td>12</td>
</tr>
<tr>
<td>LEGL 100</td>
<td>LEGL 100</td>
<td>12</td>
</tr>
<tr>
<td>SOC 120</td>
<td>SOC 120</td>
<td>12</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>WRIT 124</td>
<td>12</td>
</tr>
</tbody>
</table>

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS SPECIFIED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN ADHOC COMPUTED BY THE REGISTRAR'S OFFICE THAT IS ISSUED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY THREE SEMESTERS PRIOR TO THE DATE THEIR CERTIFICATE OR DEGREE IS EXPECTED TO BE GRANTED.
## CRIMINAL JUSTICE, LAW ENFORCEMENT, ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 6257 (Effective Fall 2003 - Summer 2008)

This degree program prepares individuals for a career as a law enforcement officer. It also prepares students for possible entry into the Police Academy Program. This degree can be completed entirely online for students following Subchoice 2B. 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Public Service Career’s Department, Old Central Building, Room 232, telephone number (517) 483-1570.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL: 36 CREDITS</td>
</tr>
</tbody>
</table>

| CRSB 100 | Intro Computer Into Systems | 3 |
| CJSJ 101 | Intro to Criminal Justice | 3 |
| CJSJ 102 | Crime Causes and Conditions | 3 |
| CJSJ 103 | Criminal Law | 3 |
| CJSJ 106 | Intro to Juvenile Justice | 3 |
| CJSJ 201 | Criminal Justice Org/Admin | 3 |
| CJSJ 204 | Criminal Investigation | 4 |
| CJSJ 205 | Policing into the 21st Century | 3 |
| CJSJ 245 | Report Writing in CJ | 2 |
| CJSJ 255 | Human Relations/Criminal Just | 3 |
| MGMT 234 | Diversity in the Workplace | 3 |
| WRIT 124 | Technical Writing (See Note 1) | 3 |

**LIMITED CHOICE REQUIREMENTS**

| TOTAL: 30-37 CREDITS |

Complete the indicated number of credits from [Note 1].

**CHOICE 1:** General Education Core Areas

10-12 Credits

See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.

<table>
<thead>
<tr>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
</tr>
<tr>
<td>Science Core Area</td>
</tr>
<tr>
<td>Writing Core Area (See Note 2)</td>
</tr>
</tbody>
</table>

**CHOICE 2:** Law Enforcement (Choose one subchoice) 20-25 Credits

**Subchoice 2A: Mid-Michigan Police Academy Requirements (See Note 3)**

| CJSJ 101 | CJSJ 201 | CRSB 100 | Police Academy |
| CJSJ 102 | CJSJ 204 | CJSJ 103 |
| CJSJ 106 | CJSJ 206 | CJSJ 255 |
| WRIT 124 | CJSJ 245 | MGMT 224 |

**Subchoice 2B: Other Law Enforcement**

| CJSJ 203 |
| CJSJ 204 |
| SOCL 255 |

| CJSJ 101 | CJSJ 106 | CRSB 100 | Police Academy |
| CJSJ 102 | CJSJ 201 | CJSJ 103 |
| LEGL 100 | CJSJ 205 | CJSJ 255 |
| WRIT 124 | CJSJ 246 | MGMT 234 |

**MINIMUM TOTAL** 66

### SUGGESTED COURSE SEQUENCE

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

**Subchoice 2A: Mid-Michigan Police Academy**

**Subchoice 2B: Other Law Enforcement**

### STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR’S OFFICE THAT IS ISSUED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
### Juvenile Care Worker Certificate of Achievement

**Curriculum Code:** 0016 (Effective Fall 2003 - Summer 2004)

This certificate option is designed to provide entry-level skills for the person who wishes to enter the job market as a juvenile care worker at a public or private residential facility. Students may apply these credits toward completion of the Criminal Justice, Corrections Associate in Business degree.

**Prerequisites:**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**Information:**
Contact the Public Service Careers Department, Old Central Building, Room 222, telephone number (517) 483-1570.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 32 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CODE</strong></td>
<td><strong>TITLE</strong></td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
</tr>
<tr>
<td>CJUS 106</td>
<td>Intro to Juvenile Justice</td>
</tr>
<tr>
<td>CJUS 120</td>
<td>Juvenile Offenders/Their Fam</td>
</tr>
<tr>
<td>CJUS 133</td>
<td>Juvenile Residential Services</td>
</tr>
<tr>
<td>CJUS 285</td>
<td>Juvenile Internship I</td>
</tr>
<tr>
<td>CJUS 287</td>
<td>Juvenile Internship II</td>
</tr>
<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
</tr>
<tr>
<td><strong>MINIMUM TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
Students must complete all of these courses with a minimum 2.0 grade to receive this certificate which is endorsed by the Michigan Juvenile Detention Association.

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISB 100</td>
<td>CJUS 133</td>
</tr>
<tr>
<td>CJUS 106</td>
<td>CJUS 287</td>
</tr>
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<td>CJUS 120</td>
<td>HUSE 100</td>
</tr>
<tr>
<td>CJUS 285</td>
<td>SOCL 120</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>WRIT 124</td>
</tr>
</tbody>
</table>

### Mid-Michigan Police Academy Certificate of Completion

**Curriculum Code:** 0737 (Effective Fall 2003 - Summer 2004)

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 set by the Michigan Commission on Law Enforcement Standards (MCCLES) for preparing individuals for a career in law enforcement.

Within the 15 weeks, more than 650 hours are utilized to provide training in 70 different topics areas. The curriculum includes topics such as criminal law and procedure, investigations, patrol procedures, human relations, conflict mediation, firearms, precision driving, use of lethal and non-lethal force, defensive tactics, report writing, traffic enforcement, victimization, and crime prevention. The emphasis in this academy is placed upon practical and hands-on training techniques. All courses for this program must be completed in a single semester.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. All of the courses for this program are open only to students officially admitted to the Police Academy Program.

**Prerequisites:**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**Information:**
The admission and/or program requirements for this program may change each academic year. For the most recent and complete information about admission requirements, contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 232, telephone number (517) 483-5248, or contact the LCC Admissions Office, Gannon Vocational-Technical Center, Room 2210, telephone number (517) 483-1254.

**Requirements for Admission to the Mid-Michigan Police Academy Program**
For current information about admission requirements, contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 232, telephone number (517) 483-5248, or contact the LCC Admissions Office, Gannon Vocational-Technical Center, Room 2210, telephone number (517) 483-1254.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 25 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CODE</strong></td>
<td><strong>TITLE</strong></td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Criminal Invest &amp; Procedures</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Michigan Crime Law &amp; Procedure</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Petrol Procedures and Tactics</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Standard First Aid</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Rpt Writing in Law Enforce</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Highway Traffic Operations</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Basic Police Science</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Law Enforcement Phys Traing</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Precision Driving</td>
</tr>
<tr>
<td>PFIT 114</td>
<td>Advanced Circuit Training</td>
</tr>
<tr>
<td><strong>MINIMUM TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

Curriculum Code: 1039 (Effective Fall 2003 - Summer 2006)

Teacher Paraprofessionals work under the direction of a classroom teacher in settings ranging from early childhood through elementary, middle school and high school. This program meets federal requirements for teacher paraprofessionals. Students may select from three specialities: Early Childhood, Elementary or Special Education.

Some of the duties of the teacher paraprofessional include working with small groups of children on their reading, math and writing development, collecting and recording data on student performance, using technology for instructional purposes, and carrying out the instructional objectives of the classroom teacher. In addition, the teacher paraprofessional must be able to communicate effectively with parents, students and teachers, implement behavior management techniques, and recognize a range of special needs.

The Early Childhood specialty focuses on children 0-5 years while the Elementary specialty focuses on ages 6-12 years, and the Special Education specialty includes working with those with disabilities 3 years through young adult. This program can also be a first step toward teacher certification. 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 Course Descriptions or Course Offerings for course prerequisites and other information. See the Assessment and Placement Testing sections for additional assessment and advising information.

INFORMATION
Contact the Liberal Studies Office of Instruction, Arts and Sciences Building, Room 111, telephone number (517) 483-1015.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHDV 101</td>
<td>Child Growth/Development: 0-5 yrs</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 111</td>
<td>Child Guidance/Communication</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Preschool Curriculum/LEarning Environ</td>
<td>4</td>
</tr>
<tr>
<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 240</td>
<td>Art for Elementary Teachers</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 251</td>
<td>Teacher Education Practicum</td>
<td>2</td>
</tr>
<tr>
<td>GEOG 200</td>
<td>World Regional Geography</td>
<td>4</td>
</tr>
<tr>
<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 200</td>
<td>Music Fund for Elementary Teachers</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS (See Note 1) TOTAL: 43 CREDITS

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

CHOICE 1: General Education Core Areas

12-15 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area
  - Global Perspectives and Diversity Core Area
  - Mathematics Core Area
  - Science Core Area

CHOICE 2: Specialization (Choose one subspecial)

15-18 Credits

Subspecial: Early Childhood

- CHDV 101 Child Growth/Development: 0-5 yrs
- CHDV 111 Child Guidance/Communication
- CHDV 220 Preschool Curriculum/LEarning Environment
- ISCI 121 Integrated Science for Education I

Subspecial: Elementary Education

- ARTS 240 Art for Elementary Teachers
- EDUC 251 Teacher Education Practicum
- GEOG 200 World Regional Geography
- ISCI 121 Integrated Science for Education I
- MUSC 200 Music Fund for Elementary Teachers

Subspecial: Special Education

15-18 Credits

- BIOL 145 Introduction to Anatomy & Physiology
- CHDV 188 Care/Children/Special Needs
- EDUC 201 Teacher Education Practicum
- PFKN 260 Growth and Motor Behavior
- PSYC 200 Introduction to Psychology
- SIGN 169 Orientation to Special Education

CHOICE 3: Elective Courses

Select from other specializations and the following list. (See Note 5)

- BIOL 229 Nature Study for Educators
- CHDV 123 Curriculum: Early Literacy
- CHDV 124 Curriculum: Early Math Development
- CHDV 181 Adult Communication/Child Care
- CHDV 184 Children and Stress
- CRSC 120 Introduction to Computers
- EMAS 100 First Aid and CPR
- ENGL 122 Writing: Literature and Ideas
- HIST 211 U.S. History to 1877
- HIST 212 U.S. History 1877 to Present
- HUMS 215 American Civilization
- HUMS 225 Great Lakes Native American: Hist & Trad
- HUSE 110 Intro/Child Abuse and Neglect
- ISCI 122 Integrated Science for Education II
- MATH 201 Math for Elementary Teachers I
- MATH 202 Math for Elementary Teachers II
- PHEW 193 Healthy Lifestyles
- POLS 120 American Political System
- PSYC 205 Human Growth and Development
- PSYC 221 Child Psychology
- SIGN 161 American Sign Language I
- SOCL 120 Introduction to Sociology
- SPAN 121 Elementary Spanish I
- WRT 122 Composition II

MINIMUM TOTAL: 60 CREDITS

NOTES:

1. Students intending to transfer to a four-year institution should select courses that satisfy the MACRO Transfer Agreement (See Transfer Information). Students should also consult Transfer Guides for specific four-year institutions (available from advisors).

2. MATH 201 is recommended. An alternative recommendation for non-transfer students is MATH 118 or MATH 119.

3. Students completing Specialization requirements in CHOICE 2 have fulfilled the requirements for this Core area.

4. Students wishing to work with children under the age of 3 or who may substitute CHDV 221, students wishing to work in before and after school programs may substitute CHDV 122 and CHDV 221.

5. A maximum of six elective credits may be selected. If needed, from MATH 137, READ 110, SDEV 124, SDEV 125 or WRT 117.

SUGGESTED COURSE SEQUENCE:

The suggested course sequence is to take the general education and core courses during the first year. Some students may be able to complete the degree in four years if they take three years of English as an eleventh grade course. Students should contact an academic advisor or counselor before enrolling in any course.
TEACHER PARAPROFESSIONAL
CERTIFICATE OF COMPLETION

Curriculum Code: 0629 (Effective Fall 2003 - Summer 2006)

The certificate offers a foundation in educational concepts and a practical introduction to classroom management and content-area instruction. It is intended for students who may have already met federal requirements for teacher paraprofessionals by completing 60 college credits or an associate degree in a field other than education. It is also recommended as preparation for students who plan to take the state-approved exam for paraprofessionals. Courses in this certificate may also be applied toward an associate degree or transfer program leading to teacher certification.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Social Science Department, Room 353, Arts and Sciences Building, telephone number, 483-1126 or Liberal Studies Office of Instruction, Room 111, Arts and Sciences Building, telephone number, 483-1151.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHDV 186</td>
<td>Child Self-Esteem/Parenting</td>
<td>1</td>
</tr>
<tr>
<td>EDUC 220</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 225</td>
<td>Reading in Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 230</td>
<td>Intro to Special Education</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 9 CREDITS

LIMITED CHOICE REQUIREMENTS

Complete the indicated number of credits.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 240</td>
<td>Art for Elementary Teachers</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 229</td>
<td>Nature Study for Educators</td>
<td>4</td>
</tr>
<tr>
<td>EDUC 201</td>
<td>Teacher Education Practicum</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 204</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 288</td>
<td>Children's Literature</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 200</td>
<td>World Regional Geography</td>
<td>4</td>
</tr>
<tr>
<td>ISCI 121</td>
<td>Integrated Sci for Education I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 201</td>
<td>Math forElem Teachers I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 202</td>
<td>Math forElem Teachers II</td>
<td>4</td>
</tr>
<tr>
<td>MUSIC 200</td>
<td>Music Fund forElem Teachers</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 19

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHDV 186</td>
<td>EDUC 220</td>
</tr>
<tr>
<td>EDUC 225</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td>EDUC 226</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td>Lim. Ch.</td>
<td></td>
</tr>
</tbody>
</table>
### Electrical Tech, Construction Certificate of Achievement

**Curriculum Code:** 0759 (Effective Fall 2003 - Summer 2006)

This certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing construction electrician.

**Prerequisites**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**Information**
Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Total: 41 Credits</th>
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</thead>
<tbody>
<tr>
<td>BLDT</td>
<td>Structural Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>Electrical Safety Practices</td>
<td>1</td>
</tr>
<tr>
<td>ELTE</td>
<td>Practical Electricity</td>
<td>3</td>
</tr>
<tr>
<td>ELTE</td>
<td>Intro Industrial Automation</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>Basic Wiring Installation</td>
<td>2</td>
</tr>
<tr>
<td>ELTE</td>
<td>Analyzing Electric Circuits</td>
<td>5</td>
</tr>
<tr>
<td>ELTE</td>
<td>Motors and Transformers</td>
<td>5</td>
</tr>
<tr>
<td>ELTE</td>
<td>Intro to Machine Control</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>National Electrical Code I</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>Electrical Prints for Building</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>Electric Motor Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>ELTE</td>
<td>Electrical Estimating</td>
<td>3</td>
</tr>
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</table>

**Minimum Total:** 41

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>BLDT</td>
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<td>ELTE</td>
</tr>
<tr>
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**Electrical Tech, Control/Maintainance Certificate of Achievement**

**Curriculum Code:** 0760 (Effective Fall 2003 - Summer 2006)

This certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing electrician in the machine control field.

**Prerequisites**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**Information**
Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

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<tr>
<td>ELTE</td>
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<td>ELTE</td>
<td>Allen Bradley PLC-5 Advanced</td>
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</table>

**Minimum Total:** 41

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

<table>
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*Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.*

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ELECTRICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0134 (Effective Fall 2003 - Summer 2006)

Students in this program may select either the construction specialty or the machine control and maintenance specialty. Construction electricians install electrical wiring and systems in homes, offices, stores or industrial plants. Machine control designers are responsible for designing control circuits which operate machinery in plants. Maintenance electricians work in industry, maintaining and troubleshooting power and control circuits on machinery. Both specialties require mechanical aptitude, logical thinking and problem-solving skills. Employment opportunities vary with each specialty.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 1360, telephone number (517) 483-1356.

REQUIREMENTS  TOTAL: 38 CREDITS

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LIMITED CHOICE REQUIREMENTS  TOTAL: 34-35 CREDITS

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

CHOICE 1: General Education Core Areas 16-20 Credits

- Communication Core Area: 3
- Global Perspectives and Diversity Core Area: 3-4
- Mathematics Core Area: 3-4
- Science Core Area: 4-5
- Writing Core Area: 3-4

CHOICE 2: Electrical Specialization (Choose one subchoice) 18-19 Credits

Subchoice 2A: Construction Specialization

- BLDT 103: Structural Blueprint Reading | 4
- BLDT 121: Residential Framing | 4
- ELTE 142: National Electrical Code II | 4
- ELTE 143: National Electrical Code III | 4
- ELTE 240: Electrical Estimating | 3

Subchoice 2B: Machine Control and Maintenance Specialization

- ELTE 122: Industrial Control Electronics | 5
- ELTE 232: Industrial Control Design | 4
- ELTE 261: Allen-Bradley PLC-5 Advanced | 5
- MFGM 101: Industrial Hydraulics (See Note 1) | 4

MINIMUM TOTAL: 72

NOTE:
1. Students may elect to take a 3 credit course, MFGM 102 Industrial Pneumatics, in place of MFGM 101.

SUGGESTED COURSE SEQUENCE

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

Subchoice 2A: Construction Specialty

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Subchoice 2B: Control and Maintenance Specialty

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MACHINE CONTROL
CERTIFICATE OF COMPLETION

Curriculum Code: 0666 (Effective Fall 2003 - Summer 2006)

This certificate is designed to provide students with entry level skills in the understanding of basic electrical theory, basic electrical operating characteristics of industrial machinery, and basic operation of programmable logic controllers. This curriculum would be an excellent choice for students wishing to enter an industrial electrical apprenticeship or for students in other industrial trades who wish to have a basic understanding of electrical control of industrial machines. All of the course work may be applied toward the Electrical Technology, Associate in Applied Science Degree.

REQUIREMENTS  TOTAL: 22 CREDITS

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MINIMUM TOTAL: 22

SUGGESTED COURSE SEQUENCE

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ELECTRICAL WIRING

CERTIFICATE OF COMPLETION

Curriculum Code: 0964 (Effective Fall 2003 - Summer 2006)

This certificate is designed to provide students with entry level skills in basic electrical theory, fundamental wiring installation techniques, and an understanding of the National Electrical Code. This curriculum would be an excellent choice for students wishing to apply for a construction electrical apprenticeship. All of the coursework may be applied toward the Electrical Technology Associate in Applied Science Degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 130, telephone number (517) 483-1336.

REQUIREMENTS

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MINIMUM TOTAL 18

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students wishing to complete this certificate in less than four semesters, or students who for any reason are unable to follow the course sequence suggested below, should contact a program advisor for help with adjustments.

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CUSTOMER ENERGY SPECIALIST
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 1022 (Effective Fall 2003 - Summer 2008)

This curriculum is designed to give students the technical knowledge and customer relations skills to determine customer energy needs in the design, installation, and application of utility facilities. They also work in order to supply energy to the road or nearest energy supply center to the outside of a building under construction. Customer energy specialists are employed by utility companies, governmental agencies, heating and cooling contractors, the construction industry, and engineering and architectural firms. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1036, telephone number (517) 433-1398.

REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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MINIMUM TOTAL: 62 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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MINIMUM TOTAL: 42 CREDITS

SUGGESTED COURSE SEQUENCE

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

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<td>Technical Math II</td>
<td>4</td>
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<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 230</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 230</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 42 CREDITS
## FASHION DESIGN TECHNOLOGY
### CERTIFICATE OF COMPLETION

Curriculum Code: 1056 (Effective Fall 2003 - Summer 2006)

This program prepares individuals to apply artistic principles and techniques to the merchandising of commercial fashions, apparel, and accessories, and the management of fashion development projects. Instruction includes apparel design; accessories design; the design of men's, women's, and children's wear; computer assisted design and manufacturing; concept planning; designing specific materials; labor cost and analysis; fabric art and printing; and the principles of management and operations in the fashion industry.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Construction and Maintenance Technologies Department, Gannon Vocational-Technical Center, Room 1390, telephone number (517) 483-1338.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>FASH 120</td>
<td>Fashion Industry</td>
<td>3</td>
</tr>
<tr>
<td>FASH 150</td>
<td>Apparel and Textile Design</td>
<td>3</td>
</tr>
<tr>
<td>INTR 113</td>
<td>Applied Design/Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>INTR 185</td>
<td>Introduction to Textiles</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 12 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:**

- BUSM 201 International Business 3
- MKTG 119 Mktp/Manage Your Profess Image 3
- MKTG 131 Merchandising 2
- MKTG 200 Principles of Marketing 3
- MKTG 215 Marketing on the Internet 3

**TOTAL: 15-18 CREDITS**

**CHOICE 2:**

- INTR 230 World Decorative Arts 3
- INTR 231 Period Interiors 3
- INTR 232 Twentieth Century Interiors 3

**CHOICE 3:**

- ARCH 130 Intro to Architecture Drawing 3
- ARTS 131 Drawing I 3
- CADD 100 Basic Mechanical Drafting 3

**CHOICE 4:**

- CABS 131 Internet Basics for Non-Majors 2
- CABS 110 Intro to Microsoft Office 3
- CABS 125 Excel 3
- CABS 265 Using Project Mgmt Software 2

**MINIMUM TOTAL**

28

**NOTE:**

1. Students are advised to confer with program faculty to assure selection of Limited Choice courses will best fit their career plans.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
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<tbody>
<tr>
<td>FASH 120</td>
<td>FASH 150</td>
</tr>
<tr>
<td>INTR 110</td>
<td>INTR 185</td>
</tr>
<tr>
<td>Lim.Ch.1</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.2</td>
</tr>
<tr>
<td>Lim.Ch.3</td>
<td>Lim.Ch.3</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
FIRE SCIENCE ACADEMY
CERTIFICATE OF COMPLETION

Curriculum Code: 0709 (Effective Fall 2003 - Summer 2004)


The Fire Science Academy is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Fire Science Academy Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003-2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gammon Vocational-Technical Center, Room 2200, telephone number (517) 469-1254.

REQUIREMENTS FOR ADMISSION TO THE FIRE SCIENCE ACADEMY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gammon Vocational-Technical Center, Room 2200, telephone number (517) 469-1254.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 101</td>
<td>M I F.T.C. Basic Fire Lev I</td>
<td>9</td>
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<tr>
<td>FIRE 102</td>
<td>M I F.T.C. Basic Fire Lev II</td>
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<tr>
<td>PFFT 114</td>
<td>Advanced Circuit Training</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>FIRE 101</td>
</tr>
<tr>
<td>FIRE 102</td>
</tr>
<tr>
<td>PFFT 114</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### Fashion Design Technology
#### Certificate of Completion

Curriculum Code: 1056 (Effective Fall 2003 - Summer 2006)

This program prepares individuals to apply artistic principles and techniques to the merchandising of commercial fashions, apparel, and accessories, and the management of fashion development projects. Instruction includes apparel design, accessories design; the design of men’s, women’s, and children’s wear; computer assisted design and manufacturing; concept planning; designing specific materials; labor cost and analysis; fabric, art, and printing; and the principles of management and operations in the fashion industry.

### Prerequisites
Students should read Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### Information
Contact the Construction and Maintenance Technologies Department, Gannon Vocational Technical Center, Room 1380, telephone number (817) 483-1336.

### Requirements

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
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<td>Fashion Industry</td>
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<td>FASH 150</td>
<td>Apparel and Textile Design</td>
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<tr>
<td>INTR 110</td>
<td>Applied Design/Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>INTR 185</td>
<td>Introduction to Textiles</td>
<td>3</td>
</tr>
</tbody>
</table>

### Limited Choice Requirements

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

**CHOICE 1:** Business Related  
BUSN 201 International Business  
MKTG 119 Manager/Manage Your Proess Image  
MKTG 131 Merchandising  
MKTG 200 Principles of Marketing  
MKTG 210 Marketing on the Internet  

**CHOICE 2:** Discipline Related History  
INTR 231 World Decorative Arts  
INTR 231 Period Interiors  
INTR 232 Twentieth Century Interiors  

**CHOICE 3:** Delineation  
ARCH 100 Intro to Architecture Drawing  
ARTS 131 Drawing 1  
CADD 100 Basic Machine Drafting  

**CHOICE 4:** Business Computer Applications  
CABS 103 Internet Basics for Non-Majors  
CABS 110 Intro to Microsoft Office  
CABS 126 Excel  
CABS 205 Using Project Management Software  

### Minimum Total:

**TOTAL: 16-18 CREDITS**

**Minimum Total:** 28

### Note:
1. Students are advised to confer with program faculty to assure selection of Limited Choice courses will best fit their career plans.

### Suggested Course Sequence

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

<table>
<thead>
<tr>
<th>FASH 120</th>
<th>FASH 150</th>
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</thead>
<tbody>
<tr>
<td>INTR 110</td>
<td>INTR 185</td>
</tr>
<tr>
<td>Lim.Ch.1</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>Lim.Ch.3</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>Lim.Ch.4</td>
<td>Lim.Ch.2</td>
</tr>
</tbody>
</table>

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

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FIRE SCIENCE ACADEMY
CERTIFICATE OF COMPLETION

Curriculum Code: 0799 (Effective Fall 2003 - Summer 2004)


The Fire Science Academy is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Fire Science Academy Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational Technical Center, Room 2006, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE FIRE SCIENCE ACADEMY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational Technical Center, Room 2006, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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</tr>
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<tr>
<td>FIRE 101</td>
<td>MI F.F.T.C. Basic Fire Lev I</td>
<td>9</td>
</tr>
<tr>
<td>FIRE 102</td>
<td>MI F.F.T.C. Basic Fire Lev II</td>
<td>7</td>
</tr>
<tr>
<td>PFFT 114</td>
<td>Advanced Circuit Training</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

| FIRE 101 |
| FIRE 102 |
| PFFT 114 |
**FIRE SCIENCE TECHNOLOGY**  
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0123 (Effective Fall 2003 - Summer 2006)

This degree program provides students with three options to pursue a fire service career area. The first option, or subchoice, provides an individual with the flexibility to continue their educational process to a four-year fire science degree. The National Fire Academy's mission is to align all two-year degree granting fire science programs with institutions that provide a four-year fire science degree. The second option follows a general fire service career path and meets the state standards of the Michigan Fire Fighter Training Council's Fire Fighter I and II certification process. This option consists of selectives admissions to the Regional Fire Training Center at Lansing Community College. The third option enhances the promotional opportunities for the veteran firefighter employee. Courses provide a versatile approach to fire service management. *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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Public Service Careers Department, Old Central Building, Room 232, telephone number (517) 483-1760.

**REQUIREMENTS**  
**TOTAL: 35 CREDITS**

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<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>CHEM 135</td>
<td>Chemistry in Society</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 100</td>
<td>Fire of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 104</td>
<td>Fire Behavior and Combustion</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 105</td>
<td>Fire/Hydraulics/Water Supply</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 110</td>
<td>Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 112</td>
<td>Occ Safety &amp; Hlth for Fire Svcs</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 115</td>
<td>Bldg Construction/Fire Protect</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 123</td>
<td>Fire Protection Systems</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 150</td>
<td>Strategy and Tactics</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**  
**TOTAL: 29-35 CREDITS**

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

**CHOICE 1:** General Education Core Areas  
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area  
  - Global Perspectives and Diversity Core Area 3-4
  - Mathematics Core Area 3-4
  - Science Core Area (See Note 1) 0
  - Writing Core Area (See Note 1) 0

**CHOICE 2:** Computer Related

- CABS 103 | Internet Basics for Non-Majors       | 2            |
- CABS 110 | Intro to Microsoft Office            | 3            |
- CSS 100 | Intro Computer Info Systems          | 3            |

**CHOICE 3:** Fire Specialty (Choose one subchoice)

- Subchoice 3A: National Fire Academy Curriculum
  - FIRE 122 | Hazardous Materials Chemistry        | 4            |
  - FIRE 210 | Fire Investigation I                  | 4            |
  - FIRE 215 | Fire Investigation II                 | 3            |
  - FIRE 260 | Fire Administration I                 | 4            |
  - FIRE 260 | Legal Aspects/Fire Service            | 4            |
  - PFFT 115 | Emergency Services Fitness I (See Note 2) | 1        |
  - PFFT 116 | Emergency Services Fitness II (See Note 2) | 1        |

**NOTES:**
1. Students completing REQUIREMENTS have met the requirements for this Core area.
2. PFFT 117 and/or PFFT 118 may be substituted.
3. This option makes the Fire Academy which is a selective admission program. Students must meet admission requirements beyond those required for admission to the college. Students with Michigan Fire Fighter I, and II certification may be eligible to waive FIRE 101 and FIRE 102. Students should consult with a Fire Science program advisor regarding this segment of the program.

**SUGGESTED COURSE SEQUENCE:**

Students should use course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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 3B: Fire Fighter**

| FIRE 101 | FIRE 100 | FIRE 105 | FIRE 125 |
| FIRE 102 | FIRE 104 | FIRE 110 | FIRE 125 |
| PFFT 117 | WRIT 124 | FIRE 115 | Lim.Ch.1 |
| Lim.Ch.1 | Lim.Ch.1 | Lim.Ch.1 | Lim.Ch.1 |

**Subchoice 3C: Fire Service Management**

| FIRE 100 | CHEM 135 | FIRE 105 | FIRE 125 |
| FIRE 104 | FIRE 112 | FIRE 245 | FIRE 220 |
| FIRE 110 | FIRE 150 | FIRE 250 | FIRE 255 |
| FIRE 115 | PFFT 115 | Lim.Ch.1 | PFFT 116 |
| Lim.Ch.1 | WRIT 124 | Lim.Ch.2 | Lim.Ch.1 |

*Students are responsible for completing all requirements as stated. The only official documentation of program completion status is the report conducted by the Registrar's Office that is initiated when students officially apply for a degree or certificate. Students are directed to apply semesters prior to the semester they intend to graduate.*

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GIS/GEOSPACIAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0224 (Effective Fall 2003 - Summer 2006)

Geographic Information Systems and Geospatial Technology combines computer technology, mapping technologies, aerial photography, and satellite imagery with the most current environmental resource management and environmental analysis software. Geographic Information Systems (GIS) technicians work with computer drafting, design, database management, graphic design, and computer analysis. Environmental technology requirements include a working knowledge of natural systems and related regulations and their assessment, planning, restoration, and management. GIS technicians are employed with engineering and design firms, state and federal agencies, environmental firms, parks and recreation departments, and with municipalities and local government units. Not all courses in this program transfer to all colleges. Students planning to transfer should seek an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 463-1336.

REQUIREMENTS

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<tr>
<td>GRET 210</td>
<td>Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>GRET 220</td>
<td>Hydrological Systems</td>
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<tr>
<td>GRET 221</td>
<td>Landforms/Soil Systems in GIS</td>
<td>3</td>
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<tr>
<td>GRET 223</td>
<td>Environmental Resource Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>GRET 240</td>
<td>Cartography in GIS</td>
<td>3</td>
</tr>
<tr>
<td>GRET 241</td>
<td>Remote Sensors/AirPhoto Interpret</td>
<td>3</td>
</tr>
<tr>
<td>GRET 243</td>
<td>ORACLE/Geographic Info Sys</td>
<td>3</td>
</tr>
<tr>
<td>GRET 265</td>
<td>Applications in GIS</td>
<td>3</td>
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<tr>
<td>LAND 150</td>
<td>Principles of Landscape Arch</td>
<td>3</td>
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<tr>
<td>LAND 190</td>
<td>Landscape Ecology</td>
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<tr>
<td>MATH 119</td>
<td>Investigations with Math</td>
<td>3</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<td>Global Positioning Systems</td>
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<td>GRET 240</td>
<td>Cartography in GIS</td>
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<tr>
<td>GRET 241</td>
<td>Remote Sensors/AirPhoto Interpret</td>
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<tr>
<td>GRET 243</td>
<td>ORACLE/Geographic Info Sys</td>
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</tr>
<tr>
<td>GRET 253</td>
<td>Basics of ARC/View</td>
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</tr>
<tr>
<td>GRET 255</td>
<td>Beginning ARC/Info</td>
<td>3</td>
</tr>
<tr>
<td>GRET 256</td>
<td>ARC/View Extensions G.I.S.</td>
<td>3</td>
</tr>
<tr>
<td>LAND 282</td>
<td>Computer Draft/Dsgn Land Arch</td>
<td>3</td>
</tr>
</tbody>
</table>

SUGGESTED COURSE SEQUENCE

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

GEOGRAPHIC INFORMATION SYSTEMS
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0834 (Effective Fall 2003 - Summer 2006)

This certificate program will emphasize development of components for GIS and project design based on application areas. The certificate allows beginners to become familiar with basic principles and those with some application background to become computer proficient in GIS. Certificate courses can all be applied to the associate degree.

REQUIREMENTS

<table>
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<tr>
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<tbody>
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<td>GRET 205</td>
<td>Principles Geographic Info Sys</td>
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<tr>
<td>GRET 210</td>
<td>Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>GRET 240</td>
<td>Cartography in GIS</td>
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</tr>
<tr>
<td>GRET 241</td>
<td>Remote Sensors/AirPhoto Interpret</td>
<td>3</td>
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<tr>
<td>GRET 243</td>
<td>ORACLE/Geographic Info Sys</td>
<td>3</td>
</tr>
<tr>
<td>GRET 253</td>
<td>Basics of ARC/View</td>
<td>3</td>
</tr>
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<td>GRET 255</td>
<td>Beginning ARC/Info</td>
<td>3</td>
</tr>
<tr>
<td>GRET 256</td>
<td>Advanced ARC/Info</td>
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<tr>
<td>GRET 258</td>
<td>ARC/View Extensions G.I.S.</td>
<td>3</td>
</tr>
<tr>
<td>LAND 282</td>
<td>Computer Draft/Dsgn Land Arch</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

33

SUGGESTED COURSE SEQUENCE

1. Students are responsible for completing all requirements as stiped. The program's completion status is an audit conducted by the Registrar's Office that is notified when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### ACUTE CARE NURSE ASSISTANT/CERTIFICATE OF COMPLETION

Curriculum Code: 1019 (Effective Fall 2003 - Summer 2004)

This certificate curriculum will prepare an individual for employment as a nursing assistant/orderly in a hospital or other acute care delivery setting. Students will learn the knowledge and skills needed in order to provide safe basic patient care.

**PREREQUISITES:**
- Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**
- Contact the Nursing Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tr>
<td>CHSE 101</td>
<td>Acute Care Nurse Assistant/Orderly</td>
<td>5</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**
- 6 CREDITS

**NOTES:**
- A minimum grade of 2.0 is required in this course for successful completion of this certificate.

**SUGGESTED COURSE SEQUENCE**
- Students should see course descriptions to find out when departments plan to offer courses.

| CHSE 101 |

---

### BASIC EMERGENCY MED SERVICES

**CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 2269 (Effective Fall 2003 - Summer 2006)

This certificate program prepares an individual as a Basic Emergency Medical Technician (EMT). Basic EMTs perform immediate basic emergency care in medical and traumatic emergencies. Basic EMTs staff ambulances and are employed in hospitals. State licensing is required. Basic EMT courses are approved by the Michigan Department of Consumer and Industry Services. An EMT Academy option is available to students.

**PREREQUISITES**
- Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**
- Contact the Health and Human Services Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CHSE 117</td>
<td>Health Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 101</td>
<td>Basic EMT I</td>
<td>4</td>
</tr>
<tr>
<td>EMTA 102</td>
<td>Basic EMT II</td>
<td>2</td>
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<tr>
<td>EMTA 103</td>
<td>Basic EMT III</td>
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<tr>
<td>EMTA 104</td>
<td>Basic EMT IV</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 105</td>
<td>Ambulance Driving</td>
<td>1</td>
</tr>
<tr>
<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 114</td>
<td>Rescue/Extrication/Danger Sit.</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**
- 31 CREDITS

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

**Option 1 - EMT Academy**

This option allows students to complete all Basic EMT courses in their first semester. Academy courses are offered in the morning during fall semester and again during spring semester. Students must complete EMTA 101 and EMTA 102 with a 3.0 minimum grade to continue in the sequence.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMTA 101</td>
<td>BIOL 201</td>
<td>BIOL 202</td>
</tr>
<tr>
<td>EMTA 162</td>
<td>EMTA 105</td>
<td>CHSE 117</td>
</tr>
<tr>
<td>EMTA 103</td>
<td>EMTA 114</td>
<td></td>
</tr>
<tr>
<td>EMTA 104</td>
<td>WRIT 124</td>
<td></td>
</tr>
<tr>
<td>EMTA 112</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Option 2**

This option allows students to take all Basic EMT courses in the evening and take two semesters to complete. The evening sequence begins only in the fall. Students must complete EMTA 101 and EMTA 102 with a 3.0 minimum grade to continue in the sequence.

<table>
<thead>
<tr>
<th>I (Summer)</th>
<th>II (Fall)</th>
<th>III (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>EMTA 101</td>
<td>BIOL 202</td>
</tr>
<tr>
<td>CHSE 117</td>
<td>EMTA 102</td>
<td>EMTA 103</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>EMTA 105</td>
<td>EMTA 104</td>
</tr>
<tr>
<td></td>
<td>EMTA 114</td>
<td>EMTA 112</td>
</tr>
</tbody>
</table>
BASIC EMERGENCY MEDICAL TECH
CERTIFICATE OF COMPLETION

Curriculum Code: 1018 (Effective Fall 2003 - Summer 2006)

Basic Emergency Medical Technicians are members of the health care team in the
pre-hospital emergency care setting. EMT personnel staff ambulances and are
generally employed in hospitals, industry, and other public service agencies. They
are expected to respond rapidly and effectively to many forms of trauma and medical
emergencies and work in close contact with emergency physicians. The job is
often fast-paced and always challenging. State licensing is required. Basic EMT
courses are approved by the Michigan Department of Consumer and Industry
Services. An EMT Academy option is available to students.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course pre-
 requisite information. See the Assessment and Placement Testing section for skills
assessment and advising information.

INFORMATION
Contact the Health and Human Service Careers Department Office, Gannon
Vocational Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMTA 101</td>
<td>Basic EMT I</td>
<td>4</td>
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<tr>
<td>EMTA 102</td>
<td>Basic EMT II</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 103</td>
<td>Basic EMT III</td>
<td>4</td>
</tr>
<tr>
<td>EMTA 104</td>
<td>Basic EMT IV</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL: 14 CREDITS

MINIMUM TOTAL: 14

NOTES:
1. Attendance is required at all course sessions to be eligible for the National
   Registry Exam procedures.
2. To be eligible to receive the Basic Emergency Medical Technician Certificate
   of Completion, all courses in this curriculum must be completed with a 3.0
   grade or better.
3. BIOL 201 and BIOL 202 are recommended for students planning to pursue
   the Emergency Medical Services Certificate of Achievement and/or Associate
   Degrees as well as the Paramedic Certificate of Achievement.

SUGGESTED COURSE SEQUENCE

Option 1 - EMT Academy
This option allows students to complete all courses in one semester and is offered
in the morning during fall semester and again during spring semester. Students
must complete EMTA 101 and EMTA 102 with a 3.0 minimum grade to continue
in the sequence.

EMTA 101 - First 8 weeks of semester
EMTA 102 - First 8 weeks of semester
EMTA 103 - Second 8 weeks of semester
EMTA 104 - Second 8 weeks of semester
EMTA 112 - Second 8 weeks of semester

Option 2
This option allows students to take all courses in the evening. This sequence takes
two semesters to complete and begins only in the fall. Students must complete
EMTA 101 and EMTA 102 with a 3.0 minimum grade to continue in the sequence.

I (Fall) II (Spring)

EMTA 101     EMTA 103
EMTA 102     EMTA 104
EMTA 112

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

Curriculum Code: 0279 (Effective Fall 2003 - Summer 2005)

Dental hygienists are licensed preventive oral health care professionals. They provide educational, clinical, and therapeutic services to patients in dental offices, schools, hospitals, long-term care facilities, and other public health programs. Clinical skills include performing patient assessments, taking health histories, examining head, neck, and oral tissues for disease; checking blood pressure; exposing and processing dental x-ray pictures; applying decay-preventing agents to the teeth; polishing fillings; scaling and root planning teeth; and polishing teeth.

Upon graduation from this program which is accredited by the Commission on Dental Accreditation of the American Dental Association (CODA), 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 seek an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for the program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Dental Hygienist Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Tech Center, Room 2020, telephone number (517) 483-1254 or the Dental Hygienist Program, Room 267 A&S building, telephone number (517) 483-1467 or (517) 483-1468.

REQUIREMENTS FOR ADMISSION TO THE DENTAL HYGIENIST PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Tech Center, Room 2020, telephone number (517) 483-1254 or the Dental Hygienist Program (517) 483-1467 or (517) 483-1468.

REQUIREMENTS (See Note 1 and 2)
TOTAL: 70 CREDITS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE (See Note 1 and 2)</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>BIOC 201</td>
<td>Human Anatomy (See Note 3)</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 202</td>
<td>Human Physiology (See Note 3)</td>
<td>4</td>
</tr>
<tr>
<td>BIOC 203</td>
<td>Microbiology (See Note 3)</td>
<td>4</td>
</tr>
<tr>
<td>DENT 140</td>
<td>Oral Histology &amp; Embryology</td>
<td>2</td>
</tr>
<tr>
<td>DENT 142</td>
<td>Preclinical Dental Hygiene</td>
<td>2</td>
</tr>
<tr>
<td>DENT 144</td>
<td>Preclinical Dental Hygiene II</td>
<td>2</td>
</tr>
<tr>
<td>DENT 146</td>
<td>Head, Neck &amp; Oral Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>DENT 148</td>
<td>Dental Radiography</td>
<td>3</td>
</tr>
<tr>
<td>DENT 152</td>
<td>Dental Hygiene I</td>
<td>2</td>
</tr>
<tr>
<td>DENT 154</td>
<td>Clinical Dental Hygiene I</td>
<td>2.5</td>
</tr>
<tr>
<td>DENT 158</td>
<td>Pharmacology</td>
<td>3</td>
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<tr>
<td>DENT 160</td>
<td>Oral Pathology</td>
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</tr>
<tr>
<td>DENT 174</td>
<td>Clinical Dental Hygiene II</td>
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</tr>
<tr>
<td>DENT 176</td>
<td>Dental Materials &amp; Methods</td>
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</tr>
<tr>
<td>DENT 240</td>
<td>Anxiety &amp; Pain Control Mgt</td>
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</tr>
<tr>
<td>DENT 242</td>
<td>Dental Hygiene III</td>
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</tr>
<tr>
<td>DENT 244</td>
<td>Clinical Dental Hygiene III</td>
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</tr>
<tr>
<td>DENT 246</td>
<td>Principles of Periodontics</td>
<td>3</td>
</tr>
<tr>
<td>DENT 248</td>
<td>Dental Public Health &amp; Educ</td>
<td>3</td>
</tr>
<tr>
<td>DENT 252</td>
<td>Dental Hygiene IV</td>
<td>2</td>
</tr>
<tr>
<td>DENT 254</td>
<td>Clinical Dental Hygiene IV</td>
<td>3</td>
</tr>
<tr>
<td>DENT 256</td>
<td>Community Oral Health</td>
<td>2</td>
</tr>
<tr>
<td>PHFW 123</td>
<td>Human Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

Communication Core Area (See Note 4)
Global Perspectives and Diversity Core Area (See Note 4)
Mathematics Core Area (See Note 5)
Science Core Area (See Note 4)
Writing Core Area (See Note 6)

TOTAL: 3-8 CREDITS

CHOICE 2: Chemistry (See Note 7)

MINIMUM TOTAL

73

NOTES:
1. For students accepted into this program, current Basic Life Support Certification (Infant, Child, and Adult) is required throughout this program.
   (EMSS 102 or American Red Cross "Provider C"
2. Students accepted into this program must complete a physical examination and be current in all immunizations required by the Dental Hygienist Program, including Hepatitis B.
3. Although not required for the associate degree, it is strongly recommended that BIOL 121 be taken prior to BIOL 201, 202, and 203. It is also recommended that Chem 120 - Chemistry be completed prior to BIOL 201, 202, and 203.
4. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
5. Students completing Phase I requirements for admission to the Dental Hygienist Program have fulfilled the requirements for this Core area.
6. WRIT 121 is the minimum writing requirement. It may be replaced by ENG 122, ESL 120, WRIT 121, WRIT 246, WRIT 247, WRIT 251, WRIT 252, or WRIT 253.
7. By the start of Fall Semester 2004, students must demonstrate successful completion of one of the following options within the past seven years to remain in the program: (1) Complete two semesters of high school chemistry with a grade of 3.0 or higher, or (2) Complete any of the following with a grade of 2.0 or higher: CHEM 120, CHEM 123, CHEM 130, CHEM 151, or a higher numbered CHEM course with approval from a Dental Hygienist Program advisor.
   CHEM 120 is recommended.
8. All courses must be completed with a minimum grade of 2.0 to graduate.

SUGGESTED COURSE SEQUENCE
Courses listed in semesters I, II, and III below must be completed prior to admission to the Dental Hygienist Program as part of the requirements for admission, with the exception of the Limited Choice 2 Chemistry requirement (see Note 7). The Mathematical Core Area requirement must also be completed for admission and may be waived by successfully passing a proficiency exam. Once admitted to the program, students begin semester IV courses during fall semester.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>BIOL 201</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>II</td>
<td>BIOL 202</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>III</td>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
</tbody>
</table>

Core Math Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 120</td>
<td>Math for Liberal Arts</td>
</tr>
<tr>
<td>MATH 121</td>
<td>Calculus I</td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENT 140</td>
<td>Dental Hygiene I</td>
</tr>
<tr>
<td>DENT 142</td>
<td>Dental Hygiene II</td>
</tr>
<tr>
<td>DENT 144</td>
<td>Dental Hygiene III</td>
</tr>
<tr>
<td>DENT 146</td>
<td>Dental Hygiene IV</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>PHFW 123</td>
<td>Human Nutrition</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>BIOL 203</td>
<td>Microbiology</td>
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<tr>
<td>CHEM 120</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 121</td>
<td>General Chemistry II</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENT 140</td>
<td>Dental Hygiene I</td>
</tr>
<tr>
<td>DENT 142</td>
<td>Dental Hygiene II</td>
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<tr>
<td>DENT 144</td>
<td>Dental Hygiene III</td>
</tr>
<tr>
<td>DENT 146</td>
<td>Dental Hygiene IV</td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>PHFW 123</td>
<td>Human Nutrition</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an actual transcript issued by the Registrar's Office that is signed when requirements are complete. Students are encouraged to apply one semester prior to the semester they wish to graduate.
DIAGNOSTIC MEDICAL SONOGRAPHY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0790 (Effective Summer 2003 - Summer 2005)

A Diagnostic Medical Sonographer provides patient services in a variety of medical settings using medical ultrasound under the supervision of a physician. Sonographers assist the physician in gathering sonographic data necessary to diagnose a variety of conditions and diseases. Sonographers obtain, review, and integrate patient history and supporting clinical data to facilitate optimum diagnostic results. They perform appropriate procedures and record anatomical, pathological, and/or physiological data as well as sonographic data and other pertinent observations made during the procedure for interpretation by a physician. They provide patient education related to medical ultrasound and promote principles of good health.

The D.M.S. curriculum is an integrated six-semester program that incorporates didactic and clinical training designed to prepare the student for employment in the field of diagnostic medical sonography. The program is aligned with the standards and guidelines of the Joint Review Commission on Diagnostic Medical Sonography and the Commission on Accreditation of Allied Health Education Programs (JRC/DM/CAAHEP). Graduates of the program are prepared for examination by the American Registry of Diagnostic Medical Sonographers. The associate degree option is for students with no previous background in an allied health field as well as for allied health professionals who have completed the certificate of achievement and who wish to complete additional course work toward this degree.

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 in this program are open only to students officially admitted to the Diagnostic Medical Sonography Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS TOTAL: 86.5 CREDITS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CUDE 113</td>
<td>Medical Terminology for DMS</td>
<td>2.5</td>
</tr>
<tr>
<td>IDMS 200</td>
<td>Sonographic Introduction (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>IDMS 201</td>
<td>General Sonography I: Abdomen</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 202</td>
<td>OB/GYN Sonography I</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 234</td>
<td>Sonographic Physics</td>
<td>2</td>
</tr>
<tr>
<td>IDMS 245</td>
<td>Sonographic Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>IDMS 265</td>
<td>General Sonography II</td>
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</tr>
<tr>
<td>IDMS 266</td>
<td>OB/GYN Sonography II</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 268</td>
<td>Clinical Experience I</td>
<td>7</td>
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<tr>
<td>IDMS 281</td>
<td>Clinical Experience II</td>
<td>7</td>
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<tr>
<td>IDMS 285</td>
<td>Clinical Experience III</td>
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<tr>
<td>PHYS 200</td>
<td>Applied Physics (See Note 2)</td>
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</table>

LIMITED CHOICE REQUIREMENTS TOTAL: 9-11 CREDITS
Complete the indicated number of credits from each CHOICE listed below:

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>COMMUNICATION Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area (See Note 3)</td>
<td>0</td>
</tr>
<tr>
<td>Science Core Area (See Note 4)</td>
<td>0</td>
</tr>
<tr>
<td>Writing Core Area</td>
<td>3-4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 67.5

NOTE:
1. IDMS 200 may be waived by a D.M.S. program advisor for students with an allied health credential.
2. Students with prior physics education should consult with a D.M.S. program advisor before enrolling in this course.
3. Students completing Phase I requirements for admission to the Diagnostic Medical Sonography program have fulfilled the requirements for this Core area.
4. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE
It is recommended, but not required, that students complete their General Education Core courses in Semesters I & II prior to admission to the Diagnostic Medical Sonography program. BIOL 201, BIOL 202, and PHYS 200 must be completed prior to admission to the D.M.S. Program as part of the Phase I requirements for admission. MATH 112 is also required for admission to the program and may be waived by successfully passing a proficiency exam. IDMS courses are offered once a year in the following sequence. Students are admitted to the program in the spring and will be assigned to begin Semester III in the summer semester.

<table>
<thead>
<tr>
<th>I (Fall)</th>
<th>II (Winter)</th>
<th>III (Summer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>BIOL 202</td>
<td>IDMS 200</td>
</tr>
<tr>
<td>MATH 112 (or</td>
<td>PHYS 200</td>
<td>MATH 119</td>
</tr>
<tr>
<td>Proficiency)</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV (Fall)</th>
<th>V (Spring)</th>
<th>VI (Summer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDMS 201</td>
<td>IDMS 245</td>
<td>IDMS 262</td>
</tr>
<tr>
<td>IDMS 202</td>
<td>IDMS 265</td>
<td>IDMS 266</td>
</tr>
<tr>
<td>IDMS 234</td>
<td>IDMS 268</td>
<td></td>
</tr>
<tr>
<td>IDMS 260</td>
<td>IDMS 281</td>
<td></td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
# DIAGNOSTIC MEDICAL SONOGRAPHY
## CERTIFICATE OF ACHIEVEMENT

**Curriculum Code:** 0253 (Effective Fall 2003 - Summer 2004)

The certificate option of the D.M.S. program prepares students for examination by the American Registry of Diagnostic Medical Sonographers and is aligned with the standards and guidelines of the Joint Review Commission on Diagnostic Medical Sonography and the Commission on Accreditation of Allied Health Education Programs (JRCDAAMS-CAAHEP). It is an option only for graduates of an accredited allied health associate degree program including Radiologic Technology, Registered Nursing, Respiratory Therapy, Occupational Therapy, or Physical Therapy. All other students must follow the Associate in Applied Science Degree curriculum for Diagnostic Medical Sonography and should consult with a D.M.S. program advisor.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the College. Many of the courses for this program are open only to students officially admitted to the Diagnostic Medical Sonography Program.

**REQUIREMENTS FOR ADMISSION TO THE DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM**

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2240, telephone number (517) 483-1254.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDMS 201</td>
<td>General Sonography II: Abdomen</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 202</td>
<td>OB/GYN Sonography I</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 234</td>
<td>Sonographic Physics</td>
<td>2</td>
</tr>
<tr>
<td>IDMS 245</td>
<td>Sonographic Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>IDMS 265</td>
<td>General Sonography II</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 266</td>
<td>OB/GYN Sonography II</td>
<td>4</td>
</tr>
<tr>
<td>IDMS 281</td>
<td>Clinical Experience I</td>
<td>7</td>
</tr>
<tr>
<td>IDMS 282</td>
<td>Clinical Experience II</td>
<td>7</td>
</tr>
<tr>
<td>PHYS 203</td>
<td>Applied Physics (See Note 1)</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL: 46 CREDITS**

**NOTE:**
1. PHYS 203 may be waived by a D.M.S. program advisor for students with prior physics education.

**SUGGESTED COURSE SEQUENCE**

Semester I must be completed prior to admission to the D.M.S. program as part of the Phase I requirements for admission. MATH 112 is also required for admission and may be waived by successfully passing a proficiency exam. Students are admitted to the Diagnostic Medical Sonography certificate program in the spring and will be assigned to begin IDMS courses in the fall. Courses are offered once a year in the following sequence.

<table>
<thead>
<tr>
<th></th>
<th>I (Fall)</th>
<th>II (Summer)</th>
<th>IV (Summer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 112 or (Proficiency)</td>
<td>IDMS 201</td>
<td>IDMS 245</td>
<td>IDMS 282</td>
</tr>
<tr>
<td>PHYS 203</td>
<td>IDMS 202</td>
<td>IDMS 265</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDMS 234</td>
<td>IDMS 266</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDMS 280</td>
<td>IDMS 291</td>
<td></td>
</tr>
</tbody>
</table>

**DIETARY MANAGER**

## CERTIFICATE OF COMPLETION

**Curriculum Code:** 1026 (Effective Fall 2003 - Summer 2005)

This curriculum will prepare students for a career as a dietary manager. Topics include the role of the supervisor, quality assurance, nutritional principles, purchasing processes, sanitation principles, governmental laws as they apply to food service, and other required content to become a dietary manager. This curriculum will also include knowledge of disease states, as well as laboratory data and nutrional assessment techniques as they relate to providing adequate nutritional care to patients. This program is approved by the Dietary Manager’s Association. Completion of this program qualifies a student to take the Dietary Manager’s Association’s exam for certification.

**REQUIREMENTS**

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Nursing Careers Department, Gannon Vocational-Technical Center, Room 2240, telephone number (517) 483-1410.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHSE 201</td>
<td>Dietary Manager I (See Note 1)</td>
<td>5</td>
</tr>
<tr>
<td>CHSE 202</td>
<td>Dietary Manager II</td>
<td>5</td>
</tr>
<tr>
<td>CHSE 205</td>
<td>Advanced Dietary Therapy</td>
<td>5</td>
</tr>
</tbody>
</table>

**TOTAL: 16.5 CREDITS**

**MINIMUM TOTAL: 16.5**

**NOTES:**
1. Department approval is required to enroll in this course. Please contact the Nursing Careers Department
2. A minimum grade of 2.5 is required in all courses for successful completion of this certificate.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time) are not required to follow the course sequence. Students who have completed courses from another school or have prerequisites to fulfill should contact an academic advisor or counselor for help with advisements.

<table>
<thead>
<tr>
<th></th>
<th>I (Fall)</th>
<th>II (Summer)</th>
<th>IV (Summer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHSE 201</td>
<td>CHSE 202</td>
<td>CHSE 205</td>
<td></td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0276 (Effective Fall 2003 - Summer 2006)

This degree program extensively prepares the individual for a career in emergency medical services. Included in this curriculum are the basic EMT and Paramedic Certificate Programs as well as general education requirements. Basic EMT courses are approved by the Michigan Department of Consumer and Industry Services. The Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs in conjunction with the Committee on Accreditation of Educational Programs for the Emergency Medical Services Profession. 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 485-1410.

REQUIREMENTS (See Note 1) TOTAL: 61 CREDITS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Anatomy (See Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>Human Physiology (See Note 2)</td>
<td>4</td>
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<tr>
<td>EMTA 101</td>
<td>Basic EMT I</td>
<td>4</td>
</tr>
<tr>
<td>EMTA 102</td>
<td>Basic EMT II</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 103</td>
<td>Basic EMT III</td>
<td>4</td>
</tr>
<tr>
<td>EMTA 104</td>
<td>Basic EMT IV</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
<td>2</td>
</tr>
<tr>
<td>PARA 221</td>
<td>Paramedic Medical Trauma I</td>
<td>5</td>
</tr>
<tr>
<td>PARA 222</td>
<td>Paramedic Medical Trauma II</td>
<td>5</td>
</tr>
<tr>
<td>PARA 231</td>
<td>Paramedic Cardiology I</td>
<td>3</td>
</tr>
<tr>
<td>PARA 232</td>
<td>Paramedic Cardiology II</td>
<td>3</td>
</tr>
<tr>
<td>PARA 241</td>
<td>Paramedic Pharmacology I</td>
<td>3</td>
</tr>
<tr>
<td>PARA 242</td>
<td>Paramedic Pharmacology II</td>
<td>3</td>
</tr>
<tr>
<td>PARA 251</td>
<td>Paramedic Skills I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 252</td>
<td>Paramedic Skills II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 261</td>
<td>Paramedic Clinical I</td>
<td>3</td>
</tr>
<tr>
<td>PARA 262</td>
<td>Paramedic Clinical II</td>
<td>4</td>
</tr>
<tr>
<td>PARA 263</td>
<td>Paramedic Internship</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS TOTAL: 13-17 CREDITS

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

CHOICE 1: General Education Core Areas 9-11 Credits

Communication Core Area
- Global Perspectives and Diversity Core Area 3-4
- Mathematics Core Area 3-4
- Science Core Area (See Note 3) 0
- Writing Core Area (See Note 4) 0

CHOICE 2: EMS Choices (See Note 4) 4-6 Credits

CHSE 117 Health Law & Ethics 2
EMTA 105 Ambulance Driving 1
EMTA 114 Rescue/Evacuation/Danger Situ 3
EMTA 222 EMS Instructor Coordinator 6

MINIMUM TOTAL 74

NOTES:

1. This curriculum includes PARA 221 through PARA 263 which are the Paramedic Certificate of Achievement courses. The Paramedic Certificate Program is a selective admission program with admission requirements beyond those required for admission to the college. PARA 221 through PARA 263 are open only to students officially admitted to the program. Students should consult with an Emergency Medical Services program advisor regarding this segment of the program before beginning this curriculum.

2. BIOL 145 may be substituted for BIOL 201 and BIOL 202 for Fall 2003 admitted students only. Beginning with Fall 2004, BIOL 201 and BIOL 202 will be required for all students.

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

4. Students who have not already completed Basic EMT and Paramedic certificate programs must select from CHSE 117, EMTA 105, and EMTA 114 to satisfy Choice 2. Students who have already completed Basic EMT and Paramedic certificate programs may elect EMTA 222 to satisfy Choice 2.

5. To graduate from this program, a minimum grade of 3.0 is required in all CHSE, EMTA, and PARA courses. A minimum grade of 2.0 is required in all other 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 or have prerequisites to fulfill), or who have already completed a Basic Emergency Medical Services course should contact the Health and Human Service Careers Department for academic advising.

Option 1 - EMT Academy

This option allows students to complete all Basic EMT courses in one semester as listed below in Semester II. The academy is offered in the morning during fall semester and again during spring semester. (Seminars II and III can be exchanged.)

<table>
<thead>
<tr>
<th>I (Summer)</th>
<th>II (Fall)</th>
<th>III (Spring)</th>
<th>IV (Fall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>EMTA 101</td>
<td>BIOL 202</td>
<td>PARA 221</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>EMTA 102</td>
<td>Lim.Ch.</td>
<td>PARA 231</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>EMTA 103</td>
<td>Lim.Ch.</td>
<td>PARA 241</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>EMTA 104</td>
<td>Lim.Ch.</td>
<td>PARA 251</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>EMTA 112</td>
<td>Lim.Ch.</td>
<td>PARA 261</td>
</tr>
<tr>
<td>PARA 222</td>
<td>PARA 263</td>
<td>PARA 222</td>
<td>PARA 262</td>
</tr>
<tr>
<td>PARA 222</td>
<td>PARA 232</td>
<td>PARA 222</td>
<td>PARA 262</td>
</tr>
<tr>
<td>PARA 232</td>
<td>PARA 222</td>
<td>PARA 232</td>
<td>PARA 262</td>
</tr>
</tbody>
</table>

Option 2

This option allows students to take all Basic EMT courses in the evening as listed below in Semesters II and III. This option begins only in the fall.

<table>
<thead>
<tr>
<th>I (Summer)</th>
<th>II (Fall)</th>
<th>III (Spring)</th>
<th>IV (Fall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>BIOL 202</td>
<td>EMTA 103</td>
<td>PARA 25</td>
</tr>
</tbody>
</table>
HEALTH CAREERS

2003-2005 Catalog Lansing Community College

HEALTH UNIT CLERK/COORDINATOR
CERTIFICATE OF COMPLETION

Curriculum Code: 1014 (Effective Fall 2003 - Summer 2004)

This certificate curriculum prepares individuals for entry-level positions as health unit clerks and will provide a basic knowledge of word building, use, pronunciation, and spelling of medical terms. It will also introduce the student to basic health care unit coordinator skills such as communication, computer skills, accuracy, chart forms, admissions, transfers, discharges, death and dying, pharmacology, laboratory test, transcribing physician orders, and job application skills.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Nursing Careers Department, Glidden Vocational-Technical Building, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>TOTAL CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHSE 120</td>
<td>Medical Terminology</td>
<td>4</td>
</tr>
<tr>
<td>CHSE 132</td>
<td>Health Unit Coordinator</td>
<td>5</td>
</tr>
<tr>
<td>MINIMUM TOTAL:</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

NOTES:
1. A minimum grade of 2.5 is required in all courses for successful completion of this certificate.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below should contact an academic adviser or counselor for help with adjustments.

CHSE 120
CHSE 132

HEALTHCARE CENTRAL SERV TECH
CERTIFICATE OF COMPLETION

Curriculum Code: 1017 (Effective Fall 2003 - Summer 2004)

This certificate curriculum prepares individuals to function competently in the central service department of a healthcare facility. Duties include, but are not limited to, processing of patient care equipment, supplies, and instruments for use in all departments. Includes principles and practices of decontamination, cleaning, disinfection, sterilization, and distribution of medical/surgical supplies.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Nursing Careers Department, Glidden Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>TOTAL CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHSE 145</td>
<td>Healthcare Central Serv Tech</td>
<td>5</td>
</tr>
<tr>
<td>MINIMUM TOTAL:</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

NOTES:
1. A minimum grade of 2.5 is required in CHSE 145 for successful completion of this certificate.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses.

CHSE 145

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for graduation or continue. Students are expected to apply one semester prior to the semester they intend to graduate.
LONG-TERM CARE NURSE AIDE
CERTIFICATE OF COMPLETION

Curriculum Code: 102S (Effective Fall 2003 - Summer 2004)

The certificate curriculum will prepare an individual to be a nurse aide in a long-term care facility or home health care agency. This state-approved course will provide specific knowledge and skills required for a nurse aide to safely function in a long-term care setting. Upon successful completion of this course, the student is qualified to take the State Competency Evaluation Nurse Aide Examination to become a Certified Nursing Assistant (CNA).

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Nursing Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 4 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CHSE 108</td>
<td>Long-term Care Nurse Aide</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 4

NOTES:
1. A minimum grade of 2.5 is required in CHSE 108 for successful completion of this certificate.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses.

CHSE 108

Students are responsible for completing all requirements as specified. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
MASSAGE THERAPY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0837 (Effective Fall 2003 - Summer 2008)

This program prepares an individual in the field of soft tissue massage. Massage therapists may be employed in private practice or in a variety of health care settings, spas, lodges, and exercise facilities. The Certificate of Achievement is not affiliated with any national certification organization; however, the Massage Therapy Program is approved through the National Certification Board for Therapeutic Massage and Bodywork (NCTMB). Successful completion of this program prepares an individual for national certification testing through the NCTMB.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750; telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 145</td>
<td>Introductory Anat &amp; Physiology</td>
<td></td>
</tr>
<tr>
<td>MASC 270</td>
<td>Massage Therapy-Beginning</td>
<td></td>
</tr>
<tr>
<td>MASC 271</td>
<td>Massage Therapy-Intermediate</td>
<td></td>
</tr>
<tr>
<td>MASC 275</td>
<td>Touch for Health</td>
<td></td>
</tr>
<tr>
<td>MASC 277</td>
<td>Polarity Therapy I</td>
<td></td>
</tr>
<tr>
<td>MASC 279</td>
<td>Business Applications/Masg</td>
<td></td>
</tr>
<tr>
<td>MASC 282</td>
<td>Clinical/Rehab Massage Tech I</td>
<td></td>
</tr>
<tr>
<td>MASC 283</td>
<td>Clinical/Rehab Massage Tech II</td>
<td></td>
</tr>
<tr>
<td>MASC 285</td>
<td>Sports Massage Techniques</td>
<td></td>
</tr>
<tr>
<td>MASC 290</td>
<td>Massage Lab Practicum (See Note 1)</td>
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<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
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</tr>
<tr>
<td>PFHW 181</td>
<td>Stress Management</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 29 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHO 1</td>
<td></td>
</tr>
<tr>
<td>CHSE 118</td>
<td>Herbology in Health Careers</td>
</tr>
<tr>
<td>MASC 278</td>
<td>Polarity Therapy II</td>
</tr>
<tr>
<td>MASC 285</td>
<td>Maternal/Infant Massage</td>
</tr>
<tr>
<td>PFHW 135</td>
<td>Med Alternatives/HE &amp; WHs</td>
</tr>
<tr>
<td>PFHW 133</td>
<td>Therapeutic Touch and Yoga</td>
</tr>
<tr>
<td>PFHW 161</td>
<td>Self-Awareness: Key to Wholes</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 31

NOTES:
1. The Massage Lab Practicum (MASC 290) consists of 32 hours of supervised massage work. Students must enroll in MASC 280 three semesters, completing a minimum of 32 supervised lab hours in each semester of enrollment for a total of 96 hours.
2. All courses must be completed with a 2.5 grade or better to receive the Certificate of Achievement.
3. All massage courses must be completed within five years of enrollment in the first massage course.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 145</td>
<td>MASC 271</td>
<td>MASC 277</td>
<td>MASC 279</td>
</tr>
<tr>
<td>MASC 270</td>
<td>MASC 275</td>
<td>MASC 282</td>
<td>MASC 283</td>
</tr>
<tr>
<td>MASC 280</td>
<td>MASC 290</td>
<td>MASC 286</td>
<td>MASC 288</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>PFHW 181</td>
<td>PFHW 191</td>
<td>MASC 290</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
SUGGESTED COURSE SEQUENCE

MINIMUM TOTAL

1. CHE 101
2. CHE 102
1. CHE 211
2. CHE 212
CHE 103
Total Credits: 11

REQUIREMENTS

PHI 101
6 Credits

INFORMATION

Students should see the Health Care Department, Business Office, for information about majors and minors.

SUGGESTED COURSE SEQUENCE

MINIMUM TOTAL

1. CHE 101
2. CHE 102
1. CHE 211
2. CHE 212
CHE 103
Total Credits: 15

REQUIREMENTS

PHI 101
6 Credits

INFORMATION

Students should see the Health Care Department, Business Office, for information about majors and minors.
NURSE AIDE: ACUTE & LONG-TERM
CERTIFICATE OF COMPLETION

Curriculum Code: 1027 (Effective Fall 2003 - Summer 2004)

This certificate curriculum will prepare an individual for employment as a nurse assistant in an acute care hospital, a home health care clinic, or a long-term care facility. Upon successful completion of this course, the student is qualified to take the State Competency Evaluation Nurse Aide Examination to become a Certified Nursing Assistant (CNA).

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Nursing Careers Department, Gerren Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 8 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHSE 110</td>
<td>Nurse Aide: Acute &amp; Long-Term</td>
<td>8</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 8

NOTES:
1. A minimum grade of 2.5 is required in CHSE 110 for successful completion of this certificate.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses.

CHSE 110
NURSING, LPN OPTION
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0235 (Effective Fall 2003 - Fall 2004)

The Practical Nursing Program at Lansing Community College is approved by the Michigan Board of Nursing and implements the career ladder concept. There are specific prerequisites required for entry into the program. Building on these prerequisites, a student completing the first year receives a Certificate of Achievement and is eligible to take a national examination for Licensed Practical Nurse (LPN).

The Licensed Practical Nurse (LPN) Program prepares an individual to, with supervision from the Registered Nurse, implement a plan of care for clients in a variety of health care settings. The education and scope of practice of the LPN is determined by state law. Successful completion of the National Council Licensure Examination Practical Nurse is required.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Room 2200, Gannon Vocational Technical Center, telephone (517) 485-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND AN OPTIONS
For current information about admission requirements, students must contact the Admissions Office, Room 2200, Gannon Vocational Technical Center, telephone (517) 485-1254.

REQUIREMENTS (See Note 1)  TOTAL: 44 CREDITS

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<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
</tr>
</thead>
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<tr>
<td>BIOL 201</td>
<td>Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>NURS 150</td>
<td>Fundamentals in Nursing Care (See Note 2)</td>
<td>6</td>
</tr>
<tr>
<td>NURS 160</td>
<td>Acute Nursing Care</td>
<td>6</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Maternity Nursing Care</td>
<td>6</td>
</tr>
<tr>
<td>NURS 200</td>
<td>Pharmacology (See Note 2)</td>
<td>6</td>
</tr>
<tr>
<td>PFWH 163</td>
<td>Healthy Lifestyles</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 205</td>
<td>Human Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I (See Note 3)</td>
<td>4</td>
</tr>
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</table>

MINIMUM TOTAL 44

NOTES:
1. Current Basic Life Support Certification (BLS) is required throughout the program (EMSS 102 or American Red Cross “Provider C.”)
2. NURS 201 may be taken up to two years prior to admission to the Nursing Program or concurrently with NURS 150.
3. WRIT 121 is the minimum writing requirement. It may be replaced by WRIT 122, WRIT 131 or WRIT 132.
4. All courses in this curriculum must be completed with a grade of 2.5 or better to earn the certificate of achievement with the exception of MATH 112 which must be completed with a 2.0 or better.

SUGGESTED COURSE SEQUENCE
Courses listed in Semester I below must be completed prior to admission to the Nursing Program as part of the Phase I requirements for admission. MATH 112 - Intermediate Algebra is required for admission and may be waived by successfully passing a proficiency exam. Although students are accepted to the program in June or July, they will be assigned to begin Semester II in either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all of the courses, with the aforementioned grades, listed in a previous sequential semester. Please note: some courses may be completed before the designated semester, typically non-nursing courses. NURS 200 is the only NURS-prefix course that is offered summer semester.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<tbody>
<tr>
<td>BIOL 201</td>
<td>BIOL 202</td>
<td>NURS 150</td>
</tr>
<tr>
<td>MATH 112 (or NURS 150</td>
<td>NURS 165</td>
<td>Proficiency NURS 200</td>
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<tr>
<td>PFWH 163</td>
<td>PSYC 205</td>
<td>WRIT 121</td>
</tr>
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</table>
NURSING, RN OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0222 (Effective Fall 2003 - Fall 2005)

The Nursing Program at Lansing Community College is nationally accredited by the National League for Nursing Accrediting Commission (NLNAC) and is approved by the Michigan Board of Nursing. It implements the career 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 successfully completing the second year will receive an associate degree in applied science and is eligible to take the national examination for Registered Nurse (RN). A current LPN or licensed paramedic may gain entry into the second year of the associate degree RN program as an advanced standing student.

The Registered Nurse (RN) Program prepares the individual to care for clients of all ages in a variety of health care settings. As an essential member of the health care team, the RN is responsible for developing, implementing and evaluating a plan of care for clients. The RN is required to assist clients in achieving their health goals through effective communication, decision making, problem-solving, management and technological skills. Registered nurses work in hospitals, clinics, offices, nursing homes, and home health care settings. In addition to schools, research facilities, and community agencies. The education and scope of practice of the RN is determined by state law. The student must successfully complete this program and the National Council Licensing Examination-Registered Nurse (NCLEX-RN).

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS (See Note 1)  TOTAL: 48 CREDITS

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<tr>
<td>BIOI 201</td>
<td>Human Anatomy</td>
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<td>BIOI 202</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOI 203</td>
<td>Microbiology (See Note 2)</td>
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</tr>
<tr>
<td>NURS 200</td>
<td>Pharmacology (See Note 3)</td>
<td>3</td>
</tr>
<tr>
<td>NURS 250</td>
<td>Mental Health Nursing Care</td>
<td>5</td>
</tr>
<tr>
<td>NURS 265</td>
<td>Pediatric Nursing Care</td>
<td>5</td>
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<tr>
<td>NURS 260</td>
<td>Advanced Chronic Nursing Care</td>
<td>5</td>
</tr>
<tr>
<td>NURS 265</td>
<td>Advanced Acute Nursing Care</td>
<td>5</td>
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<td>NURS 290</td>
<td>Leadership in Nursing Care</td>
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<td>NURS 295</td>
<td>Healthy Lifestyles</td>
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<td>PSYC 300</td>
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<td>PSYC 205</td>
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</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I (See Note 4)</td>
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LIMITED CHOICE REQUIREMENTS  TOTAL: 26-27 CREDITS
Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas  5-7 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where applicable, are available for each core area.)

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DESCRIPTION</th>
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<tr>
<td>COMM</td>
<td>Communication Core Area</td>
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<tr>
<td>GLPD</td>
<td>Global Perspectives and Diversity Core Area</td>
<td>5-4</td>
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<tr>
<td>MATH</td>
<td>Mathematics Core Area (See Note 5)</td>
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</tr>
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<td>SCIE</td>
<td>Science Core Area (See Note 6)</td>
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<td>WRIT</td>
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CHOICE 2: Nursing Program Areas (Choose one subchoice)  20 Credits
(Nursing students will select either Subchoice 2A or 2B to satisfy the first year requirements of the Nursing, RN Option Associate in Applied Science Degree.)

Subchoice 2A: Traditional Sequence
<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>NURS 150</td>
<td>Fundamentals of Nursing (See Note 9)</td>
<td>5</td>
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<td>NURS 180</td>
<td>Acute Nursing Care</td>
<td>6</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Maternity Nursing Care</td>
<td>5</td>
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</tbody>
</table>

Subchoice 2B: Advanced Standing Sequence
<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>NURS 210</td>
<td>LPN/Paramedic to RN Transition</td>
<td>15</td>
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</table>

MINIMUM TOTAL  74

NOTES:
1. Current Basic Cardiac Support Certification (BLS) is required throughout the program. EMRS 102 or American Red Cross Provider C"
2. Although not required for the associate degree, BIOL 204 is strongly recommended to be taken concurrently with BIOL 203. It will be required for nurses who continue on to a four-year university.
3. NURS 200 may be taken up to two years prior to admission into the program or concurrently with NURS 150.
4. WRIT 121 is the minimum writing requirement. It may be replaced by WRIT 122, WRIT 131, or WRIT 132.
5. Students meeting Phase 1 admission requirements for the Nursing Program have met the Math Core requirement for this curriculum.
6. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
7. A current and unrestricted LPN or Paramedic license and a minimum of one year work experience is required for this subchoice. Students should contact the Nursing Careers Department at (517) 463-1410 for information.
8. All courses in the curriculum must be completed with a grade of 2.5 or better to graduate with the exception of (1) MATH 112, (2) the Communication Core Area course, and (3) the Global Perspectives and Diversity Core Area course, all three of which must be completed with a grade of 2.0 or better.

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply the term before which they will graduate.
SUGGESTED COURSE SEQUENCE

Subchoice 2A: Traditional Sequence

Courses listed in Semesters I below must be completed prior to admission to the Nursing Program as part of the Phase I requirements for admission. MATH 112 - Intermediate Algebra is required for admission and may be waived by successfuly passing a proficiency exam. Although students are accepted to the program in June or July, they will be assigned to begin Semester II in either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all of the courses listed in the previous sequential semester with the grade requirements in Note 8 above. Please note that some courses may be completed before the designated semester, typically non-nursing courses. NURS 200 is the only NURS-prefix course that is offered summer semester.

<table>
<thead>
<tr>
<th>I</th>
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<th>IV</th>
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<td>BIOL 201</td>
<td>BIOL 202</td>
<td>BIOL 203</td>
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<td></td>
<td>MATH 112 (or</td>
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<td>MATH 112</td>
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<tr>
<td></td>
<td>Proficiency)</td>
<td>Proficiency)</td>
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<td>PSYC 200</td>
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<td></td>
<td>WRIT 121</td>
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<td>v</td>
<td>NURS 280</td>
<td>NURS 285</td>
<td>NURS 280</td>
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<td>15</td>
<td>NURS 285</td>
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<td>5</td>
<td>NURS 270</td>
<td>NURS 270</td>
<td>NURS 270</td>
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<tr>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
</tr>
</tbody>
</table>

Subchoice 2B: Advanced Standing Sequence

Courses listed in Semesters I and II below must be completed prior to admission to the Nursing Program as part of the Phase I requirements for admission. MATH 112 - Intermediate Algebra is required for admission and may be waived by successfully passing a proficiency exam. Although students are accepted to the program in June or July, they will be assigned to begin Semester III in the fall semester. A student may not begin a new semester until she or he has successfully completed all of the courses listed in the previous sequential semester with the grade requirements in Note 8 above.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<th>IV</th>
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<td>BIOL 203</td>
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<td></td>
<td>MATH 112 (or</td>
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</tr>
<tr>
<td></td>
<td>Proficiency)</td>
<td>Proficiency)</td>
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<td>NURS 285</td>
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<td>5</td>
<td>NURS 270</td>
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<td>Lim. Ch.</td>
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</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
PARAMEDIC
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0272 (Effective Fall 2003 - Summer 2004)

This certificate program prepares the Basic EMT in advanced techniques of administering care in life-threatening conditions. Paramedics are employed by advanced life support ambulances and in emergency departments and critical care units of hospitals. State licensing is required. The Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs in conjunction with the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions.

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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE PARAMEDIC PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>BIOC 201</td>
<td>Human Anatomy (See Note 1)</td>
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<td>BIOC 202</td>
<td>Human Physiology (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>PARA 221</td>
<td>Paramedic Medical Trauma I</td>
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<tr>
<td>PARA 222</td>
<td>Paramedic Medical Trauma II</td>
<td>5</td>
</tr>
<tr>
<td>PARA 223</td>
<td>Paramedic Cardiology I</td>
<td>3</td>
</tr>
<tr>
<td>PARA 224</td>
<td>Paramedic Cardiology II</td>
<td>3</td>
</tr>
<tr>
<td>PARA 241</td>
<td>Paramedic Pharmacology I</td>
<td>3</td>
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<tr>
<td>PARA 242</td>
<td>Paramedic Pharmacology II</td>
<td>3</td>
</tr>
<tr>
<td>PARA 251</td>
<td>Paramedic Skills I</td>
<td>2</td>
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<tr>
<td>PARA 252</td>
<td>Paramedic Skills II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 261</td>
<td>Paramedic Clinical I</td>
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<td>PARA 262</td>
<td>Paramedic Clinical II</td>
<td>3</td>
</tr>
<tr>
<td>PARA 263</td>
<td>Paramedic Internship</td>
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MINIMUM TOTAL        44

NOTE:
1. BIOC 145 may be substituted for BIOC 201 and BIOC 202 for Fall 2003 admitted students only. Beginning with Fall 2004, BIOC 201 and BIOC 202 will be required for all students.
2. Students must complete each required PARA course with a minimum 3.0 grade to earn a Certificate of Achievement. BIOC 201 and BIOC 202 must be completed with a minimum 2.0 grade.

SUGGESTED COURSE SEQUENCE
Courses listed in Semesters I and II below must be completed prior to admission to the Paramedic program as part of the Phase I requirements for admission. PARA courses begin only in the fall and are offered once a year in the following sequence. Students are admitted to the program in the summer and will be assigned to begin Semester III in the fall semester. A student may not begin a new semester until he or she has successfully completed all of the courses listed in a previous sequenced semester.

<table>
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<tr>
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<th>IV (Spring)</th>
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<tr>
<td>BIOC 201</td>
<td>BIOL 202</td>
<td>PARA 221</td>
<td>PARA 222</td>
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<td>PARA 221</td>
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<table>
<thead>
<tr>
<th>V (Summer)</th>
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<td>PARA 263</td>
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Students are responsible for completing all requirements as specified. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### PHARMACY TECHNICIAN
#### CERTIFICATE OF COMPLETION

Curriculum Code: 1024 (Effective Fall 2003 - Summer 2004)

This certificate curriculum is designed to introduce students to the skills necessary for a pharmacy technician position in a hospital or retail pharmacy. Students will be prepared to function with knowledge and accuracy in dispensing and control of drugs in either setting. Students are prepared to take the Pharmacy Technician State Certification Exam.

**PREREQUISITES**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**
Contact the Nursing Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

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<tbody>
<tr>
<td>CHSE 225</td>
<td>Pharmacy Technician (See Note 1)</td>
<td>4</td>
<td>4</td>
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</table>

**MINIMUM TOTAL** 4

**NOTES:**
1. Completion of MATH 050 with a 2.0 minimum or Math Level 4 is required to enroll in this course.
2. A minimum grade of 2.5 is required in CHSE 225 for successful completion of this certificate.

**SUGGESTED COURSE SEQUENCE**
Students should see course descriptions to find out when departments plan to offer courses.

1. CHSE 225

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### PHLEBOTOMY TECHNICIAN
#### CERTIFICATE OF COMPLETION

Curriculum Code: 1010 (Effective Fall 2003 - Summer 2004)

This certificate curriculum 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. A phlebotomist may work in a variety of settings such as hospitals, outpatient labs, physicians' offices, or clinics; or may travel to different locations such as convalescent hospitals.

**PREREQUISITES**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**
Contact the Nursing Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

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<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CHSE 143</td>
<td>Phlebotomy Technician</td>
<td>2</td>
<td>2</td>
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</tbody>
</table>

**MINIMUM TOTAL** 2

**NOTES:**
1. A minimum grade of 2.5 is required in CHSE 143 for successful completion of this certificate.

**SUGGESTED COURSE SEQUENCE**
Students should see course descriptions to find out when departments plan to offer courses.

1. CHSE 143
RADIOLOGY TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0196 (Effective Fall 2003 - Summer 2005)

Radiologic technologists, also called radiographers, operate X-ray equipment under the direction of a physician, taking radiographs of internal parts of the body. Most often radiologic technologists are employed in hospitals, clinics, and physician offices. Graduates of the program will be eligible for examination by the American Registry of Radiologic Technologists (ARRT). Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course. This program is accredited by the Joint Review Committee on Education in Radiologic Technology.

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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2202, telephone number (517) 493-1254.

REQUIREMENTS FOR ADMISSION TO THE RADIOLOGY TECHNOLOGY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2202, telephone number (517) 493-1254.

REQUIREMENTS

<table>
<thead>
<tr>
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<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Anatomy</td>
<td>4</td>
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<tr>
<td>BIOL 202</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CMSE 117</td>
<td>Health Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>IRTX 103</td>
<td>Intro to Imaging/Patient Care</td>
<td>4</td>
</tr>
<tr>
<td>IRTX 111</td>
<td>Radiographic Positioning I</td>
<td>5</td>
</tr>
<tr>
<td>IRTX 112</td>
<td>Radiographic Positioning II</td>
<td>5</td>
</tr>
<tr>
<td>IRTX 114</td>
<td>Cross-Sectional Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>IRTX 121</td>
<td>Radiographic Exposure I</td>
<td>3</td>
</tr>
<tr>
<td>IRTX 122</td>
<td>Radiographic Exposure II</td>
<td>3</td>
</tr>
<tr>
<td>IRTX 131</td>
<td>Radiologic Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRTX 132</td>
<td>Radiobiology and Protection</td>
<td>2</td>
</tr>
<tr>
<td>IRTX 203</td>
<td>Intra/Radiologic Pathology</td>
<td>2</td>
</tr>
<tr>
<td>IRTX 222</td>
<td>Clinical Practice I</td>
<td>4</td>
</tr>
<tr>
<td>IRTX 204</td>
<td>Clinical Practice II-S</td>
<td>5</td>
</tr>
<tr>
<td>IRTX 214</td>
<td>Comprehensive Experience I</td>
<td>6</td>
</tr>
<tr>
<td>IRTX 215</td>
<td>Comprehensive Experience II</td>
<td>6</td>
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</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 9-11 CREDITS

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

1. General Education Core Areas 9-11 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

   Communication Core Area 3
   Global Perspectives and Diversity Core Area 3-4
   Mathematics Core Area (See Note 1) 0
   Science Core Area (See Note 2) 0
   Writing Core Area 3-4

MINIMUM TOTAL 79

NOTES:
1. Students completing Phase I requirements for admission to the Radiologic Technology Program have fulfilled the requirements for this Core area.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE
BIOL 201 must be completed prior to admission to the Radiologic Technology Program as part of the Phase I requirements for admission. MATH 112 is also required for admission and may be waived by successfully passing the MATH 112 proficiency exam. Beginning with Fall 2004, BIOL 201, BIOL 202, and MATH 112 or proficiency must all be completed prior to admission. The program admits students in the fall semester only. Students who for any reason are unable to follow the course sequence suggested below (for example, those who have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments. Although not a requirement, it is strongly recommended that students complete Limited Choice Requirements before entry into the program.

<table>
<thead>
<tr>
<th>I</th>
<th>II (Final)</th>
<th>III (Option)</th>
<th>IV (Credit)</th>
</tr>
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<tbody>
<tr>
<td>BIOL 201</td>
<td>BIOL 202</td>
<td>CMSE 117</td>
<td>IRTX 204</td>
</tr>
<tr>
<td>MATH 112 or proficiency</td>
<td>IRTX 100</td>
<td>IRTX 122</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>IRTX 111</td>
<td>IRTX 121</td>
<td>IRTX 222</td>
<td>Lim.Ch.</td>
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</table>

V  | VI (Final) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
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<td>IRTX 114</td>
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<td>IRTX 131</td>
<td>IRTX 200</td>
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<tr>
<td>IRTX 214</td>
<td>IRTX 218</td>
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<tr>
<td>Lim.Ch.</td>
<td></td>
</tr>
</tbody>
</table>

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

Curriculum Code: 1201 (Effective Fall 2003 - Summer 2005)

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 handling sterile instruments to the surgical assistant or surgeon. The surgical technologist may work in a hospital operating room, a surgeon's private office, a surgical outpatient clinic, and possibly in an emergency room or obstetrical delivery room. The surgical technologist may become certified through a national exam offered by the Association of Surgical Technologists. This program is accredited by the Accreditation Review Committee on Education in Surgical Technology (ARC-ST) and the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. Students wishing to pursue the Certificate of Achievement in Surgical Technology may select that curriculum option and will not need to meet CORE general education requirements included in the associate degree curriculum. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE SURGICAL TECHNOLOGY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS (See Note 1) TOTAL: 50 CREDITS

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<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Anatomy (See Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 202</td>
<td>Human Physiology (See Note 3)</td>
<td>4</td>
</tr>
<tr>
<td>CHSE 117</td>
<td>Health Law and Ethics (See Note 2)</td>
<td>2</td>
</tr>
<tr>
<td>CHSE 120</td>
<td>Medical Terminology (See Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>SURG 100</td>
<td>Fundamental Surgical Tech</td>
<td>3</td>
</tr>
<tr>
<td>SURG 101</td>
<td>The Surgical Patient</td>
<td>2</td>
</tr>
<tr>
<td>SURG 123</td>
<td>Surgical Assay (See Note 3)</td>
<td>3</td>
</tr>
<tr>
<td>SURG 124</td>
<td>Operative Procedures</td>
<td>3</td>
</tr>
<tr>
<td>SURG 125</td>
<td>Applied Surg Techniques I</td>
<td>2</td>
</tr>
<tr>
<td>SURG 126</td>
<td>Applied Surg Techniques II</td>
<td>4</td>
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<tr>
<td>SURG 127</td>
<td>Applied Surg Techniques III</td>
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<td>SURG 128</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I (See Note 4)</td>
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LIMITED CHOICE REQUIREMENTS TOTAL: 15-19 CREDITS

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

CHOICE 1: General Education Core Areas 8-12 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where applicable, are available for each core area.)

- Communication Core Area 3-4
- Global Perspectives and Diversity Core Areas (See Note 5) 3-4
- Mathematics Core Area 3-4
- Science Core Area (See Note 5) 0
- Writing Core Area (See Note 5) 0

CHOICE 2: Surgical Technology Supportive Courses 9-12 Credits

- CHEM 120 Gen. Organic & Biological Chem 4
- CHEM 135 Chemistry in Society 3
- CHSE 114 Introduction to Pathology 2
- CHSE 115 Pharmacology-Altered Health 2
- CHSE 145 Healthcare Central Serv Tech 3
- MGMT 231 Team Development 3
- MGMT 249 Dealing with Dificult People 1
- MGMT 271 Managing/Resolving Conflict 1
- MGMT 272 Success Through Assertiveness 1
- PHIL 151 Intro. Logic & Critical Think 4
- PSYC 175 Psych of Death/Prep Living 4
- PSYC 200 Introduction to Psychology 4

MINIMUM TOTAL: 65

NOTES:
1. Current LCC Basic Cardiac Life Support Certification is required throughout the program (EMR/IA or CPR/AED/Provider). It is highly recommended that students familiarize themselves with computer technology. It is also recommended that students enroll in CABS 103 Internet Basics for Non-Majors.
2. This course must be completed prior to admission to the Surgical Technology program as part of the Phase I requirements for admission.
3. It is highly recommended that students complete SURG 103 prior to admission to the Surgical Technology program. SURG 103 will be required for admission beginning with the Fall 2004 curriculum.
4. WRIT 121 is the minimum writing requirement. It may be replaced by WRIT 122, WRIT 131, or WRIT 132.
5. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
6. All REQUIREMENTS must be completed with a minimum 2.5 grade or better with the exception of MGMT 231 and WRIT 121 which must be completed with a minimum 2.0 grade.
7. All LIMITED CHOICE REQUIREMENTS must be completed with a minimum 2.0 grade.

SUGGESTED COURSE SEQUENCE
BIOL 201, BIOL 202, CHSE 117, and CHSE 120 must be completed prior to admission to the Surgical Technology program as part of the Phase I requirements for admission. It is highly recommended that students also complete SURG 103 prior to admission for Fall 2003. (Beginning Fall 2004, this will be a requirement.) Students should use course descriptions to find out when departments place to offer courses. Students who for any reason are unable to follow the 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>
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<th>Notes</th>
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<td>BIOL 201</td>
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<td>SURG 100</td>
<td>SURG 104</td>
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<td>CHSE 117</td>
<td>SURG 103</td>
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<td>SURG 123</td>
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<td>CHSE 120</td>
<td>Lm.Ch.</td>
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</table>

V (Summer)

- MGMT 234
- WRIT 121
- Lm.Ch.
- Lm.Ch.

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**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**
SURGICAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0216 (Effective Fall 2003 - Summer 2004)

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 handling sterile instruments to the surgical assistant or surgeon. The surgical technologist may work in a hospital operating room, a surgeon's private office, a surgical outpatient clinic, and possibly in an emergency room or obstetrical delivery room. The surgical technologist may become certified through a national exam offered by the Association of Surgical Technologists. An associate degree in Surgical Technology is also available for career advancement opportunities. This program is accredited by the Accreditation Review Committee on Education in Surgical Technology (ARC-ST) and the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003/2004 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE SURGICAL TECHNOLOGY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS (See Note 1)

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<td>BIOL 202</td>
<td>Human Physiology (See Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>CHSE 117</td>
<td>Health Law and Ethics (See Note 2)</td>
<td>2</td>
</tr>
<tr>
<td>CHSE 120</td>
<td>Medical Terminology (See Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>SURG 100</td>
<td>Fundamental Surgical Tech</td>
<td>3</td>
</tr>
<tr>
<td>SURG 121</td>
<td>The Surgical Patient</td>
<td>2</td>
</tr>
<tr>
<td>SURG 102</td>
<td>Surgical Assess (See Note 3)</td>
<td>2</td>
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<td>SURG 104</td>
<td>Operative Procedures</td>
<td>6</td>
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<tr>
<td>SURG 121</td>
<td>Applied Surg Techniques I</td>
<td>2</td>
</tr>
<tr>
<td>SURG 122</td>
<td>Applied Surg Techniques II</td>
<td>4</td>
</tr>
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<td>SURG 123</td>
<td>Applied Surg Techniques III</td>
<td>3</td>
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<tr>
<td>SURG 124</td>
<td>Applied Surg Techniques IV</td>
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</tr>
<tr>
<td>MINIMUM TOTAL</td>
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<td>43</td>
</tr>
</tbody>
</table>

NOTES:
1. Current Basic Cardio-Lite Support Certification (BCLS) is required throughout the program (EMSB 102 or American Red Cross "Provider C"). It is highly recommended that students be familiar with computer technology. It is also recommended that students enroll in CABS 103 Internet Basics for Non-Majors.
2. This course must be completed prior to admission to the Surgical Technology program as part of the Phase I requirements for admission.
3. It is highly recommended that students complete SURG 103 prior to admission to the Surgical Technology program. SURG 103 will be required for admission beginning with the Fall 2004 curriculum.
4. Students must complete all required courses with a minimum 2.5 grade or better.

SUGGESTED COURSE SEQUENCE
BIOL 201, BIOL 202, CHSE 117, and CHSE 120 must be completed prior to admission to the Surgical Technology program as part of the Phase I requirements for admission. It is highly recommended that students also complete SURG 103 prior to admission for Fall 2003. (Beginning Fall 2004, this will be a requirement.) Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should consult an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
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<th>IV (Summer)</th>
</tr>
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<td>BIOL 201</td>
<td>BIOL 202</td>
<td>SURG 103</td>
<td>SURG 104</td>
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<td>CHSE 117</td>
<td>SURG 102</td>
<td>SURG 101</td>
<td>SURG 123</td>
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<td>CHSE 120</td>
<td>SURG 121</td>
<td>SURG 122</td>
<td>SURG 124</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is issued when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
HEAT & AIR COND/BUILDING MAINT.
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0638 (Effective Fall 2003 - Summer 2008)

Students in this program may select either the Heating, Air Conditioning and Refrigeration specialty (HVAC/R) or the Building Maintenance specialty. HVAC/R technicians work on systems that control temperature, humidity, and air quality of enclosed spaces. They are required to design, install, service, and maintain the various types of equipment used to control human comfort, preservation of food products, critical medical supplies, and computer and mechanical processes in residential, commercial, industrial, and institutional environments. Building maintenance technicians must have most of these same skills in addition to being able to maintain the aesthetic and structural integrity of buildings. They may also be responsible for maintenance and repair of mechanical, plumbing, and electrical equipment, as well as grounds-keeping. They should be versatile enough to do routine painting, drywall, plastering, woodworking, pool maintenance, as well as some custodial work. Both of the above technicians must have a strong mechanical aptitude, be self-motivated, willing to assist others, and have a structured approach to problem solving. They should also have good communication skills, the ability to work well with others, and understand all aspects of the construction trade. Employment opportunities vary with each specialty.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Construction and Maintenance Technologies Department, Gannon Vocational Technical Center, Room 1360, telephone number (517) 463-1336.

REQUIREMENTS

TOTAL: 58 CREDITS

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<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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<tr>
<td>BLDT 121</td>
<td>Residential Framing (See Note 1)</td>
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<tr>
<td>HVAC 109</td>
<td>Fundamentals of HVAC</td>
<td>3</td>
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<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication/Installation</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
<td>2</td>
</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>
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<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</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>
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<td>HVAC 221</td>
<td>Introduction to Hydraulics</td>
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<td>HVAC 230</td>
<td>Air Conditioning II</td>
<td>4</td>
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<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
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</tr>
<tr>
<td>HVAC 241</td>
<td>Refrigeration II</td>
<td>4</td>
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<tr>
<td>MATH 119</td>
<td>Investigations with Math</td>
<td>3</td>
</tr>
<tr>
<td>CADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 12-13 CREDITS

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

CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are required for each core area.)

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<thead>
<tr>
<th>Credit Hours</th>
<th>Name</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Communication Core Area (See Note 2)</td>
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<tr>
<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
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<tr>
<td>Mathematics Core Area (See Note 2)</td>
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<tr>
<td>Science Core Area (See Note 2)</td>
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<tr>
<td>Writing Core Area (See Note 2)</td>
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12-13 CREDITS

Subchoice 2A: HVAC/R Technician

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<tr>
<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
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<td>HVAC 201</td>
<td>Mechanical Code</td>
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</tr>
<tr>
<td>HVAC 231</td>
<td>Heat Pump</td>
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<tr>
<td>HVAC 250</td>
<td>Pneumatic Control</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 253</td>
<td>Fund of Direct Digital Control</td>
<td>3</td>
</tr>
</tbody>
</table>

Subchoice 2B: Building Maintenance Technician

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 101</td>
<td>Basic Woodworking (See Note 2)</td>
<td>2</td>
</tr>
<tr>
<td>BLDT 120</td>
<td>Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 122</td>
<td>General Home Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation (See Note 3)</td>
<td>2</td>
</tr>
<tr>
<td>HORT 105</td>
<td>Post/Problem Ornamental Plants</td>
<td>3</td>
</tr>
<tr>
<td>LAND 155</td>
<td>Home Landscape Maintenance</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

71 CREDITS

NOTES:

1. Students who have experience in woodworking may be able to take an individual project lab course (BLDR 110 or BLDR 112) in place of BLDT 101.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students who have taken HVAC 110 - Applied Electricity I will be able to waive the prerequisite to ELTE 112 by contacting an advisor in the Construction and Maintenance Technologies Department for approval.

SUGGESTED COURSE SEQUENCE

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

Curriculum Code: 0832 (Effective Fall 2003 - Summer 2008)

Students in this program may select either the Heating, Air Conditioning and Refrigeration specialty (HVAC/R) or the Building Maintenance specialty. Students selecting the HVAC/R option will receive instruction on how to install, service, and maintain heating, air conditioning, and refrigeration systems, including sheet metal and electrical, to prepare for entry-level positions. Students selecting the building maintenance option will learn through practical hands-on courses that will provide them with the necessary technical knowledge and skills needed for an entry-level position in the maintenance of residential and commercial buildings.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Garrison Vocational-Technical Center, Room 1380, telephone number (517) 483-1386.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC 100</td>
<td>Fundamentals of HVAC</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication/Instl</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
<td>2</td>
</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 211</td>
<td>Schematics</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 220</td>
<td>Heating II</td>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: HVAC Specialty (Choose one subchoice) 12-16 Credits

Subchoice 1A: HVAC/R Technician

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC 201</td>
<td>Mechanical Code</td>
</tr>
<tr>
<td>HVAC 230</td>
<td>Air Conditioning II</td>
</tr>
<tr>
<td>HVAC 240</td>
<td>Refrigeration I</td>
</tr>
<tr>
<td>HVAC 241</td>
<td>Refrigeration II</td>
</tr>
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</table>

Subchoice 1B: Building Maintenance Technician

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 101</td>
<td>Basic Woodworking (See Note 1)</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing</td>
</tr>
<tr>
<td>BLDT 125</td>
<td>Interior Carpentry</td>
</tr>
<tr>
<td>BLDT 126</td>
<td>General Home Maintenance</td>
</tr>
</tbody>
</table>

NOTE:
1. Students who have experience in woodworking may be able to take an individual project lab course (BLDR 110 or BLDR 112) in place of BLDT 101.

SUGGESTED COURSE SEQUENCE

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

Subchoice 1A: HVAC/R Technician

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC 100</td>
<td>HVAC 111</td>
<td>HVAC 201</td>
<td>HVAC 241</td>
<td></td>
</tr>
<tr>
<td>HVAC 105</td>
<td>HVAC 120</td>
<td>HVAC 220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HVAC 110</td>
<td>HVAC 130</td>
<td>HVAC 230</td>
<td>HVAC 240</td>
<td></td>
</tr>
<tr>
<td>HVAC 211</td>
<td>HVAC 220</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subchoice 1B: Building Maintenance Technician

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC 100</td>
<td>HVAC 111</td>
<td>BLDT 101</td>
<td>BLDT 126</td>
<td></td>
</tr>
<tr>
<td>HVAC 105</td>
<td>HVAC 120</td>
<td>BLDT 121</td>
<td>BLDT 132</td>
<td></td>
</tr>
<tr>
<td>HVAC 110</td>
<td>HVAC 130</td>
<td>HVAC 220</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE:
1. Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
HEAVY EQUIPMENT OPERATOR
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1628 (Effective Fall 2003 - Summer 2008)

A heavy equipment operator is responsible for the safe and efficient operation of a variety of equipment used at construction and road building sites. To be successful, the operator should be able to operate all types of equipment. He/she must be able to inspect and operate the equipment in a manner that ensures compliance with applicable safety regulations. Additionally, the operator must be able to read surveyor stakes, perform minor repairs, complete math calculations, and maintain equipment. Operators must be knowledgeable about soil types to ensure that the completed work will meet intended expectations. An operator must have good eye-hand coordination and must be able to work with a minimum of supervision. Attention to detail and a sense of responsibility are required.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Transportation Technologies Department located at the LCC Aviation Center, 3428 W. Hanger Drive, Lansing, MI 48906, telephone number (517) 297-5980.

REQUIREMENTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
<td>2</td>
</tr>
<tr>
<td>GRET 221</td>
<td>Landforms/Soil Systems in GIS</td>
<td>3</td>
</tr>
<tr>
<td>HEGT 100</td>
<td>Equipment Introduction</td>
<td>5</td>
</tr>
<tr>
<td>HEGT 110</td>
<td>Part 10 MCGHA</td>
<td>1</td>
</tr>
<tr>
<td>HEGT 120</td>
<td>Backhoe Operator</td>
<td>3</td>
</tr>
<tr>
<td>HEGT 121</td>
<td>Excavator Operator</td>
<td>3</td>
</tr>
<tr>
<td>HEGT 122</td>
<td>Wheel Loader Operator</td>
<td>2</td>
</tr>
<tr>
<td>HEGT 123</td>
<td>Forklift Operator</td>
<td>1</td>
</tr>
<tr>
<td>HEGT 130</td>
<td>Motor Grader Operator</td>
<td>5</td>
</tr>
<tr>
<td>HEGT 131</td>
<td>Bulldozer Operator</td>
<td>3</td>
</tr>
<tr>
<td>HEGT 132</td>
<td>Trenching and Graderwork</td>
<td>3</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL: 35 CREDITS

MINIMUM TOTAL: 35

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMSA 100</td>
<td>HEGT 120</td>
<td>GRET 221</td>
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<tr>
<td>HEGT 100</td>
<td>HEGT 121</td>
<td>HEGT 150</td>
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<tr>
<td>HEGT 110</td>
<td>HEGT 122</td>
<td>HEGT 131</td>
</tr>
<tr>
<td>WELD 100</td>
<td>HEGT 123</td>
<td>HEGT 132</td>
</tr>
</tbody>
</table>
HEAVY EQUIPMENT REPAIR TECH
ASSOCIATE IN APPLIED SCIENCE

Curriculum Code: 1055 (Effective Fall 2003 - Summer 2008)

A heavy equipment repair technician is responsible for the efficient, timely, and proper repair on a variety of heavy-duty construction and road equipment. The technician must be knowledgeable in repair of several systems used in heavy equipment including diesel engines, fuel systems, powertrain, electronics, and hydraulics. The technician must be able to diagnose problems, plan repairs including required labor and parts, and then complete the repair. Repairs must be completed with consideration to safety, MISHA, and environmental guidelines. A repair technician must be able to work with a minimum of supervision as repairs may be made off site. Attention to detail and a sense of responsibility are required.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Transportation Technologies Department located at the LCC Aviation Center, 3428 W. Hangar Drive, Lansing, MI 48906; telephone number (517) 267-5680.

REQUIREMENTS (See Note 1)

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
<th>TOTAL: 48 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Heat &amp; Air Conditioning</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HEOT 100</td>
<td>Equipment Introduction</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>HERT 100</td>
<td>Heavy Equipment Rebuild</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HERT 101</td>
<td>Heavy Equipment Electronics</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>HERT 102</td>
<td>Equipment Hydraulics</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HERT 103</td>
<td>Diesel Fuel System</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>HERT 104</td>
<td>Equipment Powertrain</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>HERT 105</td>
<td>Equipment Service Writing</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

13-16 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

Communication Core Area

Global Perspectives and Diversity Core Area

Mathematics Core Area

Science Core Area

Writing Core Area (See Note 2)

CHOICE 2:

3-4 Credits

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HERT 210</td>
<td>Heavy Equip Internship</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>WELD 161</td>
<td>Advanced AFO Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

64

NOTES:
1. Students must obtain department approval from the Transportation Technologies Department prior to registering for HERT and HEOT courses.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 103</td>
<td>HERT 100</td>
<td>HERT 102</td>
</tr>
<tr>
<td>HEOT 100</td>
<td>HEOT 101</td>
<td>HERT 104</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>WELD 100</td>
<td>HERT 105</td>
</tr>
</tbody>
</table>

SUGGESTED COURSE SEQUENCE

This program is presented in a lockstep format. It is therefore essential that prospective students consult with a Transportation Technologies Department advisor to plan their course sequence so that they may complete their education and training in a timely manner.

HEAVY EQUIPMENT REPAIR TECH
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1041 (Effective Fall 2003 - Summer 2008)

A heavy equipment repair technician is responsible for the efficient, timely, and proper repair on a variety of heavy-duty construction and road equipment. The technician must be knowledgeable in the repair of several systems used in heavy equipment. The technician must be able to diagnose problems, plan repairs including required labor and parts, and then complete the repair with consideration to safety, MISHA, and environmental guidelines. A repair technician must be able to work with a minimum of supervision as repairs may be made off site. Attention to detail and a sense of responsibility are required.

REQUIREMENTS (See Note 1)

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
<td>3</td>
</tr>
<tr>
<td>HEOT 100</td>
<td>Equipment Introduction</td>
<td>5</td>
</tr>
<tr>
<td>HERT 100</td>
<td>Heavy Equipment Rebuild</td>
<td>6</td>
</tr>
<tr>
<td>HERT 101</td>
<td>Heavy Equipment Electronics</td>
<td>5</td>
</tr>
<tr>
<td>HERT 102</td>
<td>Equipment Hydraulics</td>
<td>6</td>
</tr>
<tr>
<td>HERT 103</td>
<td>Diesel Fuel System</td>
<td>4</td>
</tr>
<tr>
<td>HERT 104</td>
<td>Equipment Powertrain</td>
<td>5</td>
</tr>
<tr>
<td>HERT 105</td>
<td>Equipment Service Writing</td>
<td>4</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

42

NOTE:
1. Students must obtain department approval from the Transportation Technologies Department prior to registering for HERT and HEOT courses.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>AUTO 103</td>
<td>HERT 100</td>
<td>HERT 102</td>
</tr>
<tr>
<td>HEOT 100</td>
<td>HERT 101</td>
<td>HERT 104</td>
</tr>
<tr>
<td>WELD 100</td>
<td>HERT 105</td>
<td></td>
</tr>
</tbody>
</table>
HOTEL-MOTEL/FOOD MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0711 (Effective Fall 2003 - Summer 2008)

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 the 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Business Department, Old Central Building, Room 210, telephone number (517) 483-1526.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCG 101</td>
<td>Accounting Info for Management</td>
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</tr>
<tr>
<td>CASS 110</td>
<td>Intro to Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 101</td>
<td>Intro Hospitality/Tourism</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 110</td>
<td>Sanitation and Safety</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 121</td>
<td>Food and Beverage Management</td>
<td>4</td>
</tr>
<tr>
<td>HMFS 124</td>
<td>Nutrition and Healthy Eating</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 126</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 204</td>
<td>Hospitality HR Management</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 205</td>
<td>Hospitality Management</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 215</td>
<td>Hospitality Sales/Marketing</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 232</td>
<td>Food and Labor Cost Control</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WNT 127</td>
<td>Business Writing</td>
<td>3</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASS 110</td>
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<tr>
<td>HMFS 101</td>
<td>HMFS 131</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 110</td>
<td>HMFS 234</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150</td>
<td>GMGT 160</td>
<td>3</td>
</tr>
<tr>
<td>WNT 127</td>
<td>WNT 127</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 43 CREDITS

SUGGESTED COURSE SEQUENCE

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. The Gourmet series courses (HMFS 200-HMFS 274) may be used as a substitution option for Subchoices 2A, 2B, or 2C with the approval of the academic team leader.

NOTE:

1. Students are responsible for completing all requirements as stated. The only official document of program completion status is an audit conducted by the Registrar's Office that is issued upon completion of all degree requirements. Students must complete the Associate in Business Degree on a full-time basis.

2. Students are required to complete a minimum of 60 credits to graduate.
**ADDITIONS CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0239 (Effective Fall 2003 - Summer 2006)

Work in substance abuse requires individuals with specialized knowledge and skills. The Certificate of Achievement is designed for individuals wanting an education with a focus on skills and knowledge related to prevention and treatment of substance abuse. A supervised two-semester practicum within a substance abuse agency is required. The curriculum is aligned with the standards set forth by the National Organization for Human Service Education and the Council for Standards in Human Service Education. The course work meets the educational component for certification as a Certified Addictions Counselor Level-I (CAC-I) of the Michigan Certification Board for Addiction Professionals (MCBAP), www.mcbap.org.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Addictions Careers Department, Gannon Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 33 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>HUSE 103</td>
<td>Introduction to Human Services</td>
<td>5</td>
</tr>
<tr>
<td>HUSE 101</td>
<td>Personal Dilemmas/Human Serv</td>
<td>2</td>
</tr>
<tr>
<td>HUSE 112</td>
<td>Understanding/Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 240</td>
<td>Substance Abuse: Spec Pop/Adol</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 242</td>
<td>Chemically Dependent Family</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 245</td>
<td>Addiction: Prevent/Treatment</td>
<td>4</td>
</tr>
<tr>
<td>HUSE 249</td>
<td>Human Services Practicum I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>HUSE 284</td>
<td>Human Services Practicum II</td>
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</tr>
<tr>
<td>SOCW 203</td>
<td>Social Work Interview</td>
<td>3</td>
</tr>
<tr>
<td>WRT 112</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

33

**NOTES:**

1. There is an application process and guidelines for admission into the practicum component. Students should meet with a program advisor to develop a plan to meet all practicum prerequisites. Applications are due by April 1 for admission to Fall practicum. Application packets with current requirements are available beginning in January from the Addictions Careers Department, Gannon Vocational-Technical Center, Room 1750. Contact the program advisor for further information.

2. All required HUSE and SOCW courses must be completed 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.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>HUSE 100</td>
<td>HUSE 240</td>
<td>HUSE 282</td>
<td>HUSE 284</td>
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<td>HUSE 101</td>
<td>HUSE 242</td>
<td>HUSE 249</td>
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</tr>
<tr>
<td>HUSE 112</td>
<td>SOCW 203</td>
<td>WRIT 112</td>
<td></td>
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</table>

**ADDITIONS MCBAP CERT PREP CERTIFICATE OF COMPLETION**

Curriculum Code: 1015 (Effective Fall 2003 - Summer 2008)

Work in substance abuse requires individuals with specialized knowledge and skills. The certificate of completion is designed for professionals with formal education/training and who wish to pursue a career as an addiction counselor. This curriculum meets the educational ethics component for certification as a Certified Addictions Counselor Level-I (CAC-I) of the Michigan Certification Board for Addiction Professionals (MCBAP), www.mcbap.org.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

**REQUIREMENTS**

<table>
<thead>
<tr>
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<th>TITLE</th>
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<tr>
<td>HUSE 112</td>
<td>Understanding/Substance Abuse</td>
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<tr>
<td>HUSE 240</td>
<td>Substance Abuse: Spec Pop/Adol</td>
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<tr>
<td>HUSE 243</td>
<td>Chemically Dependent Family</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 245</td>
<td>Addiction: Prevent/Treatment</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

13

**NOTES:**

1. Students should meet with a program advisor prior to beginning this curriculum.

2. All required HUSE courses must be completed with a 2.5 minimum 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.

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>HUSE 112</td>
<td>HUSE 240</td>
</tr>
<tr>
<td>HUSE 245</td>
<td>HUSE 242</td>
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</table>
GERONTOLOGY  
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0159 (Effective Fall 2003 - Summer 2006)

The certificate program consists of courses in aging and human services. It is designed for persons who wish to obtain knowledge and skills to work with senior adults. The curriculum is aligned with the standards set forth by the National Organization for Human Service Education and the Council for Standards in Human Service Education. Two semesters of field placement are included. It takes four semesters to complete this certificate, not including summers.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Health and Human Service Careers Department, Garnier Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

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<td>GER 100</td>
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<tr>
<td>GER 101</td>
<td>Programs/Services for Aging</td>
</tr>
<tr>
<td>GER 203</td>
<td>Physical/Mental Health Aging</td>
</tr>
<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services</td>
</tr>
<tr>
<td>HUSE 101</td>
<td>Personal Dimensions/Human Serv</td>
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<tr>
<td>HUSE 262</td>
<td>Human Services Practicum I (See Note 1)</td>
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<td>HUSE 264</td>
<td>Human Services Practicum II</td>
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<tr>
<td>SOWK 203</td>
<td>Social Work Interviewing</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS  
TOTAL: 3 CREDITS

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

CHOICE 1:  Professional Related Courses (See Note 2)  3 Credits

MINIMUM TOTAL  32

NOTES:
1. There is an application process and guidelines for admission into field placement/practicum. Students should meet with a program advisor to assist in developing a plan to meet field placement prerequisites. Field placement applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available beginning in January from the Health and Human Services Department, Garnier Vocational-Technical Center, Room 1750. Contact a program advisor for further information.
2. Students may choose from any GER0-prefix course numbered GER0 128-199. A maximum of 3 credits of GER0 191-Seminar: Special Subjects may be used to satisfy this requirement.
3. All required GER0, HUSE, and SOWK courses must be completed with a minimum 2.5 grade or better for this certificate.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<td>GER0 203</td>
<td>HUSE 262</td>
<td>HUSE 264</td>
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<td>GER0 101</td>
<td>SOWK 203</td>
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<tr>
<td>HUSE 100</td>
<td>WRIT 121</td>
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</tr>
<tr>
<td>HUSE 101</td>
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</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
CHOICE 4: Specialization (Choose one specialization) 3-10 Credits

Subchoice 4A: Addictions
HUSE 240 Substance Abuse: Sp. Pop/Adult 3
HUSE 242 Chemically Dependent Family 3
HUSE 245 Addiction: Prevent/Treatment 4

Subchoice 4B: Family (See Note 5)
SOC 254 Marriage and Family 3
SOC 260 Race and Ethnicity 3

Subchoice 4C: Gerontology (See Note 6)
GERO 101 Programs/Services for Aging 3
GERO 203 Physical/Mental Health Aging 3

Subchoice 4D: Social Work Transfer
POLS 120 American Political System 3
SOWK 101 Introduction to Social Work 3
SOWK 205 Social Welfare 3

MINIMUM TOTAL 55

NOTES:
1. Students need to meet with the Program Advisor to assist in planning their class schedules and site placement for practicum. Practicum application packets are available from the Health and Human Service Careers Department, Gannon Vocational-Technical Center, Room 1750, beginning in January. Applications are due by April 1 for admission into the practicum.
2. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
3. Students may choose from the Math Core courses. MATH 112 is recommended for students planning to transfer.
4. See the MACRAO Transfer Agreement in the Transfer Information section for appropriate humanities courses.
5. An additional 3 credits from Human Services (HUSE) are required. Students must consult with the Program Advisor for department approved courses.
6. An additional 3 credits from Gerontology (GERO) are required. Students must consult with the Program Advisor for department approved courses. Up to three credits of GERO 191 seminar course(s) are acceptable.
7. All HUSE, GERO, and SOWK courses used toward this degree must be completed with a minimum 2.0 grade or higher.

SUGGESTED COURSE SEQUENCE

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

Curriculum Code: 0266 (Effective Fall 2003 - Summer 2005)

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 the many skills, CNC programmers are employed in all industries, including aerospace, textiles, agriculture, electronics, and manufacturing.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational Technical Center, Room 1350, telephone number (517) 482-1325.

REQUIREMENTS

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<tr>
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<tr>
<td>CAD 101</td>
<td>Mechanical Drafting/Basic CAD</td>
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<tr>
<td>CAD 131</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
<tr>
<td>CAD 242</td>
<td>Unigraphics Basic</td>
<td>4</td>
</tr>
<tr>
<td>CNC 110</td>
<td>Foundations of CNC Programming</td>
<td>4</td>
</tr>
<tr>
<td>CNC 130</td>
<td>Machine Controls and Setup</td>
<td>4</td>
</tr>
<tr>
<td>Mach 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
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<tr>
<td>Mach 110</td>
<td>Machine Tool Technology I</td>
<td>4</td>
</tr>
<tr>
<td>Mach 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>Mach 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</td>
</tr>
<tr>
<td>Mach 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>Mach 140</td>
<td>Tooling Theory and Practice</td>
<td>4</td>
</tr>
<tr>
<td>Math 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>Math 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
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<tr>
<td>Phys 120</td>
<td>The Art of Physics</td>
<td>4</td>
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<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>

TOTAL: 64 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas 0 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

  Communication Core Area (See Note 1) 0
  Global Perspectives and Diversity Core Area (See Note 1) 5
  Mathematics Core Area (See Note 1) 5
  Science Core Area (See Note 1) 5
  Writing Core Area (See Note 1) 5

CHOICE 2: Drafting 3-4 Credits

  CAD 104  Descriptive Geometry 4
  CAD 110  Industrial Blueprint Reading 3
  CNC 101  PC Applications for Technology 3
  MGMT 250  Manufacturing Internship 3

CHOICE 3: Computer-Aided Manufacturing 4 Credits

  CNC 200  Unigraphics NC 4
  CNC 210  Mastercam 4

MINIMUM TOTAL 71

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<tbody>
<tr>
<td>CAD 101</td>
<td>CAD 131</td>
<td>CAD 242</td>
<td>SPCH 110</td>
</tr>
<tr>
<td>Mach 105</td>
<td>CNC 110</td>
<td>CNC 130</td>
<td>WRT 124</td>
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<td>Mach 120</td>
<td>Mach 110</td>
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</tr>
<tr>
<td>MGMT 234</td>
<td>MATH 116</td>
<td>PHYS 120</td>
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</tbody>
</table>
INDUSTRIAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0110 (Effective Fall 2003 - Summer 2006)

Industrial technology is the study of a variety of technologies used in today's industry. Physical and mental skills are required, including mechanical skills, problem-solving abilities, and dexterity. Employment opportunities are available with industries that have a variety of work processes and/or trades.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Cannon Vocational-Technical Center, Room 1580, telephone number (517) 469-1356.

REQUIREMENTS

<table>
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<td>Industrial Blueprint Reading</td>
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<tr>
<td>CNCP 110</td>
<td>Foundations of CNC Programming</td>
<td>4</td>
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<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
<td>2</td>
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<td>HVAC 110</td>
<td>Applied Electricity I</td>
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<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
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<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
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<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
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<td>MACH 135</td>
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<td>MATH 115</td>
<td>Technical Math II</td>
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<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
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<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
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<td>WELD 100</td>
<td>Combination Welding</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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TOTAL: 55 CREDITS

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>PSYCHO 101</td>
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TOTAL: 7-8 CREDITS

CHOICE 2: Technical Related

<table>
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<tr>
<th>Course</th>
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<td>CADD 121</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
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<td>CNCP 101</td>
<td>PC Applications for Technology</td>
<td>3</td>
</tr>
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<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
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</tr>
<tr>
<td>MACH 210</td>
<td>Precision Machining</td>
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TOTAL: 7-8 CREDITS

NOTE:
1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.

SUGGESTED COURSE SEQUENCE

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

I
<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Industrial Blueprint Reading</td>
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<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
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<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
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<td>MATH 115</td>
<td>Technical Math II</td>
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<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
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<td>Machine Maintenance</td>
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</table>

INDUSTRIAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0150 (Effective Fall 2003 - Summer 2008)

This certificate provides students with a basic understanding of a variety of technologies to enhance the technology skills they already possess.

REQUIREMENTS

<table>
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<tr>
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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>Industrial Blueprint Reading</td>
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</tr>
<tr>
<td>CNCP 101</td>
<td>PC Applications for Technology</td>
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<td>MACH 105</td>
<td>Machine Tool Survey</td>
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</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance</td>
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<tr>
<td>PHYS 100</td>
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</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Related Technology

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</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>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL: 12 CREDITS

NOTE:
1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.

SUGGESTED COURSE SEQUENCE

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

I
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 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 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
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<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</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>MATH 115</td>
<td>Technical Math II</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</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 100</td>
<td>Applied Physics</td>
<td>4</td>
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<tr>
<td>PHYS 200</td>
<td>Applied Physics</td>
<td>4</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</table>
MACHINE MAINTENANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0773 (Effective Fall 2003 - Summer 2006)

Machine maintenance technicians are involved with the repair, maintenance, and installation of industrial equipment. They repair the machinery of industry, solving mechanical problems. The skills necessary for this type of work are many and varied: critical thinking, problem solving, mechanics, math and physics are but a few. Maintenance technicians also need to know how to diagnose hydraulic problems, perform preventative 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 485-1192.

REQUIREMENTS

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<tr>
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<td>3</td>
</tr>
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<td>EMSA 100</td>
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<td>MATH 114</td>
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<td>MFGM 125</td>
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<td>MGMT 234</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>3</td>
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<td>SPCH 110</td>
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<td>WRIT 124</td>
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TOTAL: 63 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>3</td>
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<td>EMSA 100</td>
<td>3</td>
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<td>MACH 135</td>
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<td>MGMT 224</td>
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<td>PHYS 120</td>
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</tr>
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<td>Lin.Ch.3</td>
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<td>PHYS 120</td>
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TOTAL: 5-7 CREDITS

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

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>Communication Core Area (See Note 1)</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
</tr>
<tr>
<td>Mathematics Core Area (See Note 1)</td>
</tr>
<tr>
<td>Science Core Area (See Note 1)</td>
</tr>
<tr>
<td>Writing Core Area (See Note 1)</td>
</tr>
</tbody>
</table>

CHOICE 2: Electrical Technology

<table>
<thead>
<tr>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTE 110</td>
</tr>
<tr>
<td>HVAC 110</td>
</tr>
</tbody>
</table>

CHOICE 3: Technical Related

<table>
<thead>
<tr>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACH 100</td>
</tr>
<tr>
<td>MACH 140</td>
</tr>
<tr>
<td>MFGM 102</td>
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<tr>
<td>WELD 100</td>
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MINIMUM TOTAL

<table>
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<tr>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>63</td>
</tr>
</tbody>
</table>

NOTE:

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

Students are responsible for completing all requirements as stated. The only official documentation of program completion/status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
MACHINE REPAIR
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0147 (Effective Fall 2003 - Summer 2008)

This program provides technical knowledge and skills in the adjustment, maintenance, part replacement, and repair of tools, equipment and machines. It prepares an individual for an entry-level position.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gammon Vocational-Technical Center, Room 1380, telephone number (517) 483-1355.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>CADD 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
<td>2</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>3</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
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</table>

MINIMUM TOTAL: 30 CREDITS

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<tbody>
<tr>
<td>CADD 110</td>
<td>EMSA 100</td>
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<td>MACH 105</td>
<td>MFGM 101</td>
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<td>MFGM 111</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>WELD 100</td>
</tr>
<tr>
<td>MFGM 125</td>
<td></td>
</tr>
</tbody>
</table>

MILLWRIGHT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 3154 (Effective Fall 2003 - Summer 2008)

A millwright installs, maintains and repairs mechanical equipment in a plant, factory or mill. This program prepares an individual for an entry-level position.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gammon Vocational-Technical Center, Room 1380, telephone number (517) 483-1355.

REQUIREMENTS

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<tbody>
<tr>
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<td>EMSA 100</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>Metalurgy 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>
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<tr>
<td>MFGM 111</td>
<td>Machine Maintenance II</td>
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</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

| CHOICE 1: Building Related 3-4 Credits |
|----------------------------|-----------------|
| BLDT 103 | Introduction to Construction 3 |
| BLDT 121 | Residential Framing 4 |
| CIVL 120 | Surveying 4 |

MINIMUM TOTAL: 34 CREDITS

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMSA 100</td>
<td>BLDT 103</td>
</tr>
<tr>
<td>MACH 105</td>
<td>MACH 135</td>
</tr>
<tr>
<td>MACH 114</td>
<td>MFGM 111</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>MFGM 125</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0193 (Effective Fall 2003 - Summer 2008)

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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 482-1336.

REQUIREMENTS

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<tr>
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<tbody>
<tr>
<td>CADD 110</td>
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<td>3</td>
</tr>
<tr>
<td>CNCD 101</td>
<td>PC Applications for Technology</td>
<td>3</td>
</tr>
<tr>
<td>CNCD 110</td>
<td>Foundations of CNC Programming</td>
<td>4</td>
</tr>
<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
<td>2</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
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<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I</td>
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<td>Machine Tool Technology II</td>
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<tr>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
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</tr>
<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</td>
</tr>
<tr>
<td>MACH 130</td>
<td>Die Construction</td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
<td>4</td>
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<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
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<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
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<td>PHYS 120</td>
<td>The Art of Physics</td>
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<td>SPOH 110</td>
<td>Oral Communication in the Workplace</td>
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<td>WRT 124</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
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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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</tr>
<tr>
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<tr>
<td>0</td>
<td>Writing Core Area (See Note 1)</td>
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</tbody>
</table>

MINIMUM TOTAL

68

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

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

| ENSA 100 | CADD 110 | CNCD 101 | CXC 110 |
| MACH 105 | MACH 110 | MACH 111 | MACH 120 |
| MACH 120 | MACH 135 | MACH 140 | MACH 130 |
| MATH 114 | MATH 115 | MGMT 234 | MACH 210 |
| SPOH 110 | WRT 124 | PHYS 120 |         |

TOOL AND DIE MAKER
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0141 (Effective Fall 2003 - Summer 2008)

This program provides technical knowledge and skills to operate machine tools used in the forming of metal components, as well as the fabrication of special tools, dies, jigs, and fixtures used in cutting, working and finishing metal components. It prepares an individual for an entry-level position.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<td>Industrial Blueprint Reading</td>
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</tr>
<tr>
<td>ENSA 100</td>
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<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
<td>4</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
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</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
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</table>

MINIMUM TOTAL

36

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

| CADD 110 | ENSA 100 | MACH 112 |
| MACH 105 | MACH 110 | MACH 140 |
| MACH 120 | MACH 111 |         |
| MATH 114 | MACH 135 |         |

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

Curriculum Code: 0156 (Effective Fall 2003 - Summer 2008)

Welding is a 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 craftsman with a basic knowledge of metals, applied mathematics, blueprint reading, good eyesight, self-discipline and a respect for safety. A welder also needs to work well with his/her hands and have good manual coordination. Many hours of practice and proper training in the basics of MIG, TIG and 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1500, telephone number (517) 483-1236.

REQUIREMENTS

<table>
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<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
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</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Metalurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
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</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>MF/GM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 101</td>
<td>Advanced ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Gas Metal ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 111</td>
<td>Gas Tungsten ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Structural Fabrication/Inspect</td>
<td>2</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Structural Blueprint Reading Weld</td>
<td>4</td>
</tr>
<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
<td>2</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
<td>2</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metalurgy and Heat Treat</td>
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<td>MF/GM 125</td>
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<td>2</td>
</tr>
<tr>
<td>WELD 101</td>
<td>Advanced ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Gas Metal ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 111</td>
<td>Gas Tungsten ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Structural Fabrication/Inspect</td>
<td>2</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Structural Blueprint Reading Weld</td>
<td>4</td>
</tr>
<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
<td>2</td>
</tr>
</tbody>
</table>

SUGGESTED COURSE SEQUENCE

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

<table>
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<th>IV</th>
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<tr>
<td>MACH 105</td>
<td>MACH 135</td>
<td>SPCH 110</td>
<td>EMSA 100</td>
</tr>
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<td>MATH 114</td>
<td>MATH 115</td>
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<td>MGMT 234</td>
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<td>MF/GM 125</td>
<td>WELD 101</td>
<td>WELD 120</td>
<td>PHYS 120</td>
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<td>WELD 110</td>
<td>WELD 125</td>
<td>WELD 201</td>
</tr>
<tr>
<td>WRT 124</td>
<td>Lin.Ch.</td>
<td>Lin.Ch.</td>
<td>WELD 205</td>
</tr>
</tbody>
</table>

WELDING TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0156 (Effective Fall 2003 - Summer 2003)

Students receive hands-on instruction in the basics of MIG, TIG, shielded metal arc, brazing and oxy-fuel cutting, and plasma cutting to prepare them for entry level positions.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMSA 100</td>
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</tr>
<tr>
<td>MACH 135</td>
<td>Metalurgy and Heat Treat</td>
<td>4</td>
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<tr>
<td>MF/GM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>WELD 101</td>
<td>Advanced ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Gas Metal ARC Welding</td>
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</tr>
<tr>
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<td>Gas Tungsten ARC Welding</td>
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<tr>
<td>WELD 120</td>
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MINIMUM TOTAL: 30 CREDITS

SUGGESTED COURSE SEQUENCE

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<tbody>
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<td>EMSA 100</td>
<td>MACH 135</td>
<td>WELD 111</td>
</tr>
<tr>
<td>MF/GM 125</td>
<td>WELD 101</td>
<td>WELD 120</td>
</tr>
<tr>
<td>WELD 100</td>
<td>WELD 110</td>
<td>WELD 125</td>
</tr>
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</table>

NOTE:
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core Area.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION IS A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO AQUIRE ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
**INTERIOR DESIGN TECHNOLOGY**

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: G257 (Effective Fall 2003 - Summer 2006)

Graduates of the Interior Design Technology program work with professional interior designers to plan and create the overall design for interior spaces. They may be employed as estimators, retail salespersons, space planners, computer-aided drafting and design technicians, lighting and color consultants, or kitchen/bath designers. Depending on their specialty, interior design graduates work in retail or wholesale showrooms, design firms, building construction management offices, hospitality chains, interior furnishings manufacturers, or facilities departments. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising Information.

**INFORMATION**

Contact the Construction and Maintenance Technologies Department, Cannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1368.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>ARCH 100</td>
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<td>3</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td>3</td>
</tr>
<tr>
<td>INTR 110</td>
<td>Applied Design/Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>INTR 170</td>
<td>Interior Design Principles</td>
<td>4</td>
</tr>
<tr>
<td>INTR 190</td>
<td>Interior/ Materials/Equipment</td>
<td>4</td>
</tr>
<tr>
<td>INTR 201</td>
<td>Cultural Diversity In Housing</td>
<td>3</td>
</tr>
<tr>
<td>INTR 256</td>
<td>Interior Professional Practice</td>
<td>3</td>
</tr>
<tr>
<td>INTR 258</td>
<td>Internship</td>
<td>2</td>
</tr>
<tr>
<td>INTR 270</td>
<td>Interior Design Portfolio</td>
<td>2</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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**LIMITED CHOICE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tr>
<td>ARCH 100</td>
<td>Communication Area</td>
<td>6 Credits</td>
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<tr>
<td>ARCH 121</td>
<td>General Education Core</td>
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<tr>
<td>INTR 110</td>
<td>Global Perspectives and Diversity Core Area</td>
<td>(See Note 1)</td>
</tr>
<tr>
<td>INTR 170</td>
<td>Mathematics Core Area</td>
<td>(See Note 1)</td>
</tr>
<tr>
<td>INTR 201</td>
<td>Science Core Area</td>
<td>(See Note 1)</td>
</tr>
<tr>
<td>INTR 256</td>
<td>Writing Core Area</td>
<td>(See Note 1)</td>
</tr>
<tr>
<td>ARCH 231</td>
<td>Architectural AutoCAD I</td>
<td>4</td>
</tr>
<tr>
<td>INTR 275</td>
<td>Interior Design Commercial</td>
<td>6</td>
</tr>
<tr>
<td>ARCH 101</td>
<td>Residential Detailing</td>
<td>4</td>
</tr>
<tr>
<td>INTR 151</td>
<td>Computer-Aided Kitchen Design</td>
<td>4</td>
</tr>
<tr>
<td>INTR 285</td>
<td>Interior Design Residential</td>
<td>6</td>
</tr>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 221</td>
<td>History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 281</td>
<td>History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 282</td>
<td>History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 283</td>
<td>History of Art III</td>
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</tr>
<tr>
<td>HUMS 284</td>
<td>History of Art IV</td>
<td>4</td>
</tr>
</tbody>
</table>

**CHOICE 4:** Cultural History 3 Credits

**CHOICE 5:** Interior Design Related 2.4 Credits

**NOTES:**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students must complete two courses from CHOICE 3 to fulfill the requirements for this Core area.

**SUGGESTED COURSE SEQUENCE**

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

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:** General Education Core Areas 6 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency courses, where appropriate, are available for each core area.)

**CHOICE 2:** Speciality (Choose one subchoice) 14 Credits

**Subchoice A:** Commercial Interiors

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 231</td>
<td>Architectural AutoCAD I</td>
<td>4</td>
</tr>
<tr>
<td>INTR 275</td>
<td>Interior Design Commercial</td>
<td>6</td>
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</tbody>
</table>

**Subchoice B:** Kitchen and Bath

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 101</td>
<td>Residential Detailing</td>
<td>4</td>
</tr>
<tr>
<td>INTR 151</td>
<td>Computer-Aided Kitchen Design</td>
<td>4</td>
</tr>
<tr>
<td>INTR 285</td>
<td>Interior Design Residential</td>
<td>6</td>
</tr>
</tbody>
</table>

**CHOICE 3:** Discipline Related History 4 Credits

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL:** 54 Credits

**LANDING COMMUNITY COLLEGE CATALOG 2003-2005**
KITCHEN/BATH DESIGN SPECIALIST
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0926 (Effective Fall 2003 - Summer 2006)

This certificate of achievement is designed for students who seek education and the acquisition of new skills for occupational advancement or change. This certificate program provides immediate opportunity for employment in the Kitchen and Bath Industry in design and/or sales and may lead to certification by the National Kitchen and Bath Association (NKBA). These courses may also apply to the Interior Design Technology, Associate in Applied Science Degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course pre-requisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocation-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>Intro to Architecture Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 101</td>
<td>Residential Detailing</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td>3</td>
</tr>
<tr>
<td>INTR 130</td>
<td>Interior Design Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>INTR 110</td>
<td>Applied Design/Color Theory</td>
<td>3</td>
</tr>
<tr>
<td>INTR 151</td>
<td>Computer-Aided Kitchen Design</td>
<td>4</td>
</tr>
<tr>
<td>INTR 170</td>
<td>Interior Design Principles</td>
<td>4</td>
</tr>
<tr>
<td>INTR 190</td>
<td>Interior/Materials/Equipment</td>
<td>4</td>
</tr>
<tr>
<td>INTR 265</td>
<td>Internship</td>
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<tr>
<td>INTR 265</td>
<td>Interior Design Residential</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Speech/Marketing Area

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communicate in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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</tr>
</tbody>
</table>

MINIMUM TOTAL

39

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<tbody>
<tr>
<td>ARCH 100</td>
<td>ARCH 101</td>
<td>INTR 263</td>
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<td>ARCH 121</td>
<td>INTR 151</td>
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<td>INTR 109</td>
<td>INTR 170</td>
<td>Lim/Ch.1</td>
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<tr>
<td>INTR 110</td>
<td>INTR 190</td>
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</tbody>
</table>

INTERIOR DESIGN MERCHANDISING
CERTIFICATE OF COMPLETION

Curriculum Code: 0927 (Effective Fall 2003 - Summer 2006)

The Interior Design Merchandising Certificate of Completion provides students with knowledge and skills necessary for entry level employment as interior design assistants or for sales position in merchandising interior design products. Most of these courses may apply to the Interior Design, Kitchen/Bath Specialist Certificate of Achievement and the Interior Design Technology, Associate in Applied Science Degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course pre-requisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Construction and Maintenance Technologies Department, Gannon Vocation-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
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<tr>
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<td>DNP 101</td>
<td>PC Applications for Technology</td>
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<td>INTR 100</td>
<td>Interior Design Fundamentals</td>
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<td>INTR 170</td>
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</tr>
<tr>
<td>INTR 190</td>
<td>Interior/Materials/Equipment</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>
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<tr>
<td>INTR 201</td>
<td>Cultural History</td>
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<td>World Decorative Arts</td>
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<td>INTR 231</td>
<td>Period Interiors</td>
<td>3</td>
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<td>INTR 232</td>
<td>Twentieth Century Interiors</td>
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<td>SPCH 130</td>
<td>Fundamentals of Public Speaking</td>
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MINIMUM TOTAL

29

SUGGESTED COURSE SEQUENCE

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

<table>
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<td>Lim/Ch.2</td>
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Horticulture
Associate in Applied Science Degree

Curriculum Code: 0168 (Effective Fall 2003 - Summer 2006)

A professional horticulturist deals with plant materials, their growth, development, propagation, marketing, and use. The horticulturist works with environmental conditions and pest problems of ornamental plants and their management. The two major specialty areas are landscape horticulture and floriculture. A background in plant maintenance, knowledge of growing environments and structures, as well as retail and marketing skills, is vital. Horticulturists are employed by florists, greenhouses and garden centers, nurseries, retail sales outlets, landscape contractors, design and construction firms, and lawn care companies. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Center, Room 1350, telephone number (917) 483-1236.

REQUIREMENTS

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<td>Intro Ornamental Horticulture</td>
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<td>HORT 105</td>
<td>Pest/Problem Ornamental Plants</td>
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<td></td>
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<td></td>
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<tr>
<td>HORT 235</td>
<td>Greenhouse Structures/Environ</td>
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<tr>
<td>LAND 100</td>
<td>Intro to Landscape Drafting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 150</td>
<td>Interior Landscaping</td>
<td>3</td>
<td></td>
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<tr>
<td>LAND 160</td>
<td>Evergreen and Deciduous Trees</td>
<td>3</td>
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<tr>
<td>LAND 141</td>
<td>Flowering Trees, Shrubs, Vines</td>
<td>3</td>
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<td>Perennial/Annual Flower Plants</td>
<td>3</td>
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<td>LAND 163</td>
<td>Designing Ornamental Gardens</td>
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<td></td>
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<tr>
<td>LAND 282</td>
<td>Computer Draft/Design Land Arch</td>
<td>3</td>
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</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

Communication Core Area (See Note 1) 0
Global Perspectives and Diversity Core Area (See Note 1) 0
Mathematical Core Area (See Note 1) 0
Science Core Areas (See Note 1) 0
Writing Core Area (See Note 1) 0

CHOICE 2: Specialization (Choose one subchoice)

Subchoice 2A: Floriculture

<table>
<thead>
<tr>
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<tr>
<td>HORT 107</td>
<td>Beginning Floral Design</td>
<td>3</td>
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<tr>
<td>HORT 109</td>
<td>Contemporary Floral Design</td>
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<tr>
<td>HORT 110</td>
<td>Wedding Floral Design</td>
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<tr>
<td>HORT 143</td>
<td>Cut Flower, Foliage, Pet Plant</td>
<td>4</td>
<td></td>
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<tr>
<td>HORT 236</td>
<td>Greenhouse Ornamentals</td>
<td>3</td>
<td></td>
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<tr>
<td>HORT 237</td>
<td>Bedding Plant Production</td>
<td>3</td>
<td></td>
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<tr>
<td>HORT 238</td>
<td>Garden Center/Nursery Salads</td>
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Subchoice 2B: Landscape Horticulture

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<tbody>
<tr>
<td>LAND 150</td>
<td>Principles of Landscape Arch</td>
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<tr>
<td>LAND 152</td>
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<td>LAND 200</td>
<td>Landscape Design</td>
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<tr>
<td>LAND 210</td>
<td>Landscape Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>LAND 225</td>
<td>Landscape Cost Estimation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 232</td>
<td>Professional Rev. Land Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LAND 233</td>
<td>Grounds Management</td>
<td>3</td>
<td></td>
</tr>
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</table>

MINIMUM TOTAL 71

NOTES:

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

SUGGESTED COURSE SEQUENCE

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

Subchoice 2A: Floriculture Option

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<tr>
<td>HORT 132</td>
<td>HORT 105</td>
<td>BIEL 120</td>
<td>HORT 230</td>
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<td>HORT 135</td>
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<td>HORT 235</td>
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<td>LAND 150</td>
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<tr>
<td>LAND 150</td>
<td>LAND 141</td>
<td>LAND 150</td>
<td>LAND 152</td>
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<tr>
<td>LAND 160</td>
<td>MATH 110</td>
<td>LAND 162</td>
<td>SPCH 110</td>
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<tr>
<td>LAND 164</td>
<td>WHRT 124</td>
<td>MGMT 234</td>
<td>3</td>
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Subchoice 2B: Landscape Horticulture Option

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<td>HORT 235</td>
<td>LAND 141</td>
<td>HORT 105</td>
<td>LAND 163</td>
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<td>LAND 150</td>
<td>LAND 150</td>
<td>LAND 142</td>
<td>LAND 190</td>
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<td>LAND 154</td>
<td>LAND 282</td>
<td>LAND 152</td>
<td>LAND 225</td>
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<td>WHRT 124</td>
<td>MATH 110</td>
<td>LAND 160</td>
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<tr>
<td>MGMT 234</td>
<td>LAND 252</td>
<td>SPCH 110</td>
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</table>
LANDSCAPE CAREERS
2003-2005 Catalog Lansing Community College

LANDSCAPE ARCHITECTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0203 (Effective Fall 2003 - Summer 2006)

Landscape architects, designers, and planners deal with the ecological design and management of the land. Landscape architects and designers coordinate the analysis, planning, layout, design, and management of the exterior and interior landscape. Landscape architects and designers are employed by design and engineering firms, parks and recreation offices, landscape contractors, design and building firms, nurseries and garden centers, arborists and botanic gardens, and grounds management firms. A supporting background in computer design graphics and GIS 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Manufacturing and Land Technologies Department, Gannon Vocational-Technical Career, Room 1396, telephone number (517) 483-1336.

REQUIREMENTS
TOTAL: 72 CREDITS

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<tr>
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<tr>
<td>BIOL 120</td>
<td>Environmental Science</td>
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<td>LAND 100</td>
<td>Intro to Landscape Drafting (See Note 1)</td>
<td>3</td>
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<tr>
<td>LAND 140</td>
<td>Evergreen and Deciduous Trees</td>
<td>3</td>
</tr>
<tr>
<td>LAND 141</td>
<td>Flowering Trees, Shrubs, Vines</td>
<td>3</td>
</tr>
<tr>
<td>LAND 159</td>
<td>Principles of Landscape Arch</td>
<td>3</td>
</tr>
<tr>
<td>LAND 162</td>
<td>Landscape Graphics Computer-Gen</td>
<td>3</td>
</tr>
<tr>
<td>LAND 153</td>
<td>Landscape Graphics Comm-Adv</td>
<td>3</td>
</tr>
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<td>Planting Design I</td>
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<tr>
<td>LAND 161</td>
<td>Planting Design II</td>
<td>3</td>
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<tr>
<td>LAND 164</td>
<td>Site Design</td>
<td>3</td>
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<tr>
<td>LAND 170</td>
<td>Site Grading I</td>
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<tr>
<td>LAND 171</td>
<td>Site Grading II</td>
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<td>LAND 172</td>
<td>Site Layout</td>
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<td>LAND 225</td>
<td>Landscape Cost Estimation</td>
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<tr>
<td>LAND 222</td>
<td>Professional Fles, Land Design</td>
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<td>LAND 250</td>
<td>Landscape Construction Methods</td>
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<td>LAND 252</td>
<td>Landscape Construction Details</td>
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<tr>
<td>LAND 275</td>
<td>Landscape Documents and Spec</td>
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<tr>
<td>LAND 282</td>
<td>Computer Draft/Design Land Arch</td>
<td>3</td>
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<tr>
<td>LAND 283</td>
<td>Beginning LANDCAD</td>
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<tr>
<td>MATH 119</td>
<td>Investigations with Math</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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</table>

LIMITED CHOICE REQUIREMENTS
TOTAL: 0 CREDITS

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

CHOICE 1: General Education Core Areas 6 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.

| Communication Core Area (See Note 2) | 0 |
| Global Perspectives and Diversity Core Area (See Note 2) | 0 |
| Mathematics Core Area (See Note 2) | 0 |
| Science Core Area (See Note 2) | 0 |
| Writing Core Area (See Note 2) | 0 |

MINIMUM TOTAL 72

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.

| LAND 100 | BICL 120 | LAND 161 | LAND 171 |
| LAND 140 | LAND 141 | LAND 172 | LAND 172 |
| LAND 150 | LAND 152 | LAND 232 | LAND 225 |
| LAND 152 | LAND 160 | LAND 250 | LAND 225 |
| MATH 119 | LAND 164 | LAND 283 | LAND 276 |
| WRIT 124 | LAND 282 | MGMT 234 | SPCH 110 |

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when enrollment status for a course or courses indicates students are expected to apply one semester prior to the semester they intend to graduate.

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LEGAL ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0101 (Effective Fall 2003 - Summer 2008)

Legal assistants, also known as paralegals, assist lawyers by performing many of the same tasks, except for those considered to be the practice of law. To help lawyers prepare cases for trial, they may investigate the facts, perform legal research to identify relevant laws, legal articles, judicial decisions and other documents/materials related to the case, and prepare written reports after organizing and analyzing all the information. Other duties may include drafting briefs and pleadings; obtaining affidavits, assisting the lawyer during trial, and organizing and maintaining document and correspondence files. Some legal assistants may help with completing forms, tax returns, and drafting contracts. 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 program is approved by the American Bar Association (ABA).

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Business Department, Old Central Building, Room 210, telephone number (517) 483-1822.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<td>LEGL 115</td>
<td>Legal Assistant Career/Ethics</td>
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<td>LEGL 120</td>
<td>Legal Research I</td>
<td>3</td>
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<tr>
<td>LEGL 121</td>
<td>Legal Writing I</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 122</td>
<td>Critical Thinking in Law</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 210</td>
<td>Litigation Procedures</td>
<td>4</td>
</tr>
<tr>
<td>LEGL 211</td>
<td>Torts I</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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<td>LEGL 228</td>
<td>Computer App for the Law Office</td>
<td>3</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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<tr>
<td>WRIT 122</td>
<td>Composition II</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<td>LEGL 212</td>
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<tr>
<td>WRIT 122</td>
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<table>
<thead>
<tr>
<th>CHOICE 4:</th>
<th>General Law</th>
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<tr>
<td>LEGL 210</td>
<td>Mediation Specialties</td>
<td>3</td>
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<tr>
<td>LEGL 221</td>
<td>Real Estate Transactions</td>
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<tr>
<td>LEGL 222</td>
<td>Property Law and Procedure</td>
<td>3</td>
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<tr>
<td>LEGL 223</td>
<td>Domestic Relations</td>
<td>3</td>
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<td>LEGL 224</td>
<td>Administrative Law</td>
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<tr>
<td>LEGL 226</td>
<td>Legal Research/Investigation</td>
<td>3</td>
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<tr>
<td>LEGL 227</td>
<td>Bankruptcy and Collections</td>
<td>3</td>
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<td>LEGL 230</td>
<td>Immigration Law</td>
<td>3</td>
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<tr>
<td>LEGL 280</td>
<td>Legal Assistant Internship</td>
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MINIMUM TOTAL 63

NOTE:

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

SUGGESTED COURSE SEQUENCE

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

<table>
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<th>IV</th>
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<tr>
<td>LEGL 115</td>
<td>LEGL 120</td>
<td>LEGL 121</td>
<td>LEGL 228</td>
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<td>LEGL 126</td>
<td>LEGL 127</td>
<td>LEGL 128</td>
<td>LEGL 129</td>
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<td>WRIT 122</td>
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<td>Lim.Ch.2</td>
<td>Lim.Ch.4</td>
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<td>Lim.Ch.3</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is returned when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
LEGAL ASSISTANT

POST-BACHELOR

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0744 (Effective Fall 2003 - Summer 2005)

The legal assistant career is an excellent choice for students possessing a bachelor's degree, especially students with strong analytical and writing skills. These students may select the following certificate curriculum which requires only legal assistant courses. This curriculum is approved by the American Bar Association (ABA).

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

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

REQUIREMENTS

TOTAL: 21 CREDITS

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<tr>
<th>CODE</th>
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<td>Legal Assistant Career/Ethics</td>
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<tr>
<td>LEGL 120</td>
<td>Legal Research I (See Note 1)</td>
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<td>LEGL 121</td>
<td>Legal Writing I (See Note 1)</td>
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<td>LEGL 210</td>
<td>Litigation Procedures (See Note 1)</td>
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<tr>
<td>LEGL 211</td>
<td>Tort Law</td>
<td>2</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Basic Law I, Basic Principles</td>
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</tr>
<tr>
<td>LEGL 220</td>
<td>Legal Research and Writing II</td>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 12 CREDITS

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

CHOICE 1: Business Law

LEGL 216 | Business Law II, Commercial Law | 3 |
LEGL 217 | Business Law III, Business Organization | 3 |
LEGL 220 | Internet Legal Issues/Organization | 3 |

MINIMUM TOTAL: 33

CHOICE 2: General Law

LEGL 218 | Litigation Specialties | 3 |
LEGL 221 | Real Estate Transaction | 3 |
LEGL 222 | Probate Law and Procedure | 3 |
LEGL 223 | Domestic Relations | 3 |
LEGL 224 | Administrative Law | 3 |
LEGL 228 | Legal Interview/Investigation | 3 |
LEGL 229 | Bankruptcy and Collections | 3 |
LEGL 230 | Computer App for the Law Office | 3 |
LEGL 231 | Legal Assistant Internship | 3 |

NOTE:

1. Students in this curriculum will be granted a prerequisite override to take these courses concurrently with LEGL 115. Contact the Business Careers Department, telephone number (517) 483-1522 prior to registration.
2. Students following this curriculum must have proof of a bachelor's degree entered on their official Lansing Community College transcript before a certificate of achievement may be granted. Students who do not possess a bachelor's degree should follow the Legal Assistant Associate in Business Degree curriculum #0101.

SUGGESTED COURSE SEQUENCE

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

LEGL 115 | LEGL 211
LEGL 120 | LEGL 225
LEGL 121 | Lim.Ch.
LEGL 210 | Lim.Ch.
LEGL 215 | Lim.Ch.

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is completed when students apply for a degree or certificate. Students are advised to apply one semester prior to the semester they intend to graduate.
ADVANCED MANAGEMENT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0260 (Effective Fall 2003 - Summer 2008)

This is an advanced certificate program that may be taken after obtaining an associate or bachelors degree in order to enhance an individuals employment and advancement opportunities. Courses in this certificate may be used as the third year in the Northwood University Bachelor of Business Administration degree. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing sections for skills assessment and advising information.

INFORMATION
Contact the Business Department, Old Central Building, Room 210, telephone number (517) 483-1522 or the Advanced Management Coordinator at (517) 483-1544.

REQUIREMENTS

<table>
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<tr>
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<td>MGMT 304</td>
<td>Organizational Development</td>
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<td>MGMT 329</td>
<td>Adv Mgmt Communication Skills</td>
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<tr>
<td>MGMT 332</td>
<td>Ethics: Assurpt for the Future</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 335</td>
<td>Managerial Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 337</td>
<td>Human Resources Mgmt Skills</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 338</td>
<td>Current Topics in Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 348</td>
<td>Strategic Management/Policy (See Note 1)</td>
<td>3</td>
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</tbody>
</table>

TOTAL: 21 CREDITS

LIMITED CHOICE REQUIREMENTS (See Note 2)

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

CHOICE 1: Management
- MGMT 223: Developing Supervisory Skills - 3 Credits
- MGMT 225: Principles of Management - 3 Credits
- MGMT 300: Leading for Possibility - 3 Credits

CHOICE 2: Finance
- ACCG 271: Principles of Finance - 3 Credits
- MGMT 346: Managerial Finance - 3 Credits

CHOICE 3: Business Related (See Note 3)
- ACCG 210: Principles of Accounting I - 4 Credits
- ACCG 211: Principles of Accounting II - 4 Credits
- BUSN 201: International Business - 3 Credits
- ECON 201: Principles of Economics-Macro - 3 Credits
- ECON 202: Principles of Economics-Micro - 3 Credits
- LEGL 315: Busn Law I, Basic Principles - 3 Credits
- MGMT 101: Management Special Topics (See Note 4) - 1 Credit
- MGMT 345: Conflict & Communication - 3 Credits
- MKTG 239: Principles of Marketing - 3 Credits
- MKTG 235: Marketing Internship - 3 Credits

MINIMUM TOTAL: 30 CREDITS

NOTES:
1. It is recommended that MGMT 348 be taken near the end of this Certificate program.
2. Students should confer with a Business Department program advisor to assure that selection of Limited Choice courses will best fit their career plans, or to talk about alternative "Limited Choice" courses.
3. Students may also choose a maximum of 2 credits total from the TIME Series (course codes MGMT 243-MGMT 275) and/or a maximum of 2 credits from CABS prefix courses of 110 or above.
4. MGMT 101 may be taken up to three times for a maximum of 3 Credits toward this degree.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>MGMT 304</th>
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<tbody>
<tr>
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<td>MGMT 337</td>
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<td>MGMT 335</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office. This is required when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

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**HUMAN RESOURCE MANAGEMENT**

**ASSOCIATE IN BUSINESS DEGREE**

**Curriculum Code:** 0712 (Effective Fall 2003 - Summer 2006)

Human resource managers serve as a link between management and employees. They help manage make effective use of employees' skills, and help employees find satisfaction in their jobs and working conditions. Graduates of this program are involved in recording and evaluating information, such as job experience, education, skills, qualifications, and job performance; providing information about policies, job duties, working conditions, wages; opportunities for promotion, and employee benefits; maintaining job files on employees; administering various employee benefits; collecting and analyzing labor market data; and employee selection and training. Not all courses in program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PRESUEREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Business Department, Old Central Building, Room 216, telephone number (517) 483-1525.

**REQUIREMENTS**

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<tr>
<td>MGMT 227</td>
<td>Training/Development for Busn</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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**LIMITED CHOICE REQUIREMENTS**

| TOTAL: 19-24 CREDITS |

**CHOICE 1:** General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

| Communication Core Area (See Note 1) | 0 |
| Global Perspectives and Diversity Core Area (See Note 1) | 0 |
| Mathematics Core Area | 3-4 |
| Science Core Area | 4-5 |
| Writing Core Area (See Note 1) | 0 |

**CHOICE 2:** Specialty Related (See Notes 2 and 3)

| CEBR 200 | Intro to Labor Relations | 3 |
| CEBR 211 | Labor Negotiation/Contract Admin | 3 |
| CEBR 223 | Labor Law | 3 |
| LEGL 215 | Busin Law I, Basic Principles | 3 |
| MGMT 101 | Management Special Topics (See Note 3) | 1 |
| MGMT 150 | Managing Customer Relations | 3 |
| MGMT 219 | Time and Stress Management | 3 |
| MGMT 260 | Management Internship | 3 |
| MGMT 255 | Independent Study/Management | 1-3 |
| MGMT 300 | Leading for Productivity | 3 |
| MGMT 304 | Organizational Development | 3 |
| MGMT 329 | Adv Mgmt Communication Skills | 3 |
| MGMT 377 | Human Resource Mgmt Skills | 3 |
| MGMT 345 | Context and Transformation | 3 |
| MKTG 110 | Mktg/Manage Your Personal Image | 3 |
| MKTG 229 | Public Relations | 2 |

**MINIMUM TOTAL:** 81

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

| TOTAL: 3-4 CREDITS |

**NOTES:**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may also choose a maximum of 2 credits total from the T.M.E. Series (course codes MGMT 240 through MGMT 279).
3. MGMT 101 maybe taken up to three times for a maximum of 3 credits toward this degree.
4. Choose CABS-prefix courses of 110 or above and/or CIS-prefix courses above 100.
5. Students should confer with a Business Department program advisor to assure that selection of Limited Choice courses will best fit their career plans or to talk about alternative "Limited Choice" courses.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when programs plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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 | MGMT 224 | LABR 204 | MGMT 227 |
| MGMT 223 | MGMT 228 | MGMT 200 | MGMT 229 |
| MGMT 234 | SPCH 110 | MGMT 205 | MGMT 237 |
| Lim.Ch. | WRIT 127 | MGMT 231 | Lim.Ch. |
| Lim.Ch. | Lim.Ch. | Lim.Ch. | Lim.Ch. |
| Lim.Ch. | Lim.Ch. | Lim.Ch. | Lim.Ch. |

**LABOR RELATIONS**

**CERTIFICATE OF COMPLETION**

**Curriculum Code:** 0258 (Effective Fall 2003 - Summer 2006)

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

| TOTAL: 12 CREDITS |

**REQUIREMENTS**

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<td>LABR 204</td>
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**MINIMUM TOTAL:** 12

**SUGGESTED COURSE SEQUENCE**

| LABR 200 | LABR 201 | LABR 204 | LABR 203 |

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

Curriculum Code: 0245 (Effective Fall 2003 - Summer 2006)

A manager plans, organizes, delegates, and controls entire projects from start to finish. The role cuts across all areas of business and organizational life and has as its central purpose the increase of resources: personnel, money, machines, and materials. Managers supply the encouragement, coordination, and leadership to achieve company goals. Graduates of this program may qualify for entry-level positions. Addition of a technical or business specialty increases one's employability. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

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

REQUIREMENTS

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<td>MGMT 230</td>
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LIMITED CHOICE REQUIREMENTS

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MINIMUM TOTAL

61

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this degree.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 204 through MGMT 279) and/or a maximum of 2 credits of CABS-prefix courses of 110 or above.
3. Students should confer with a Business Department program advisor to assure that selection of Limited Choice courses will best fit their career plans or to talk about alternative Limited Choice courses.
4. MGMT 101 may be taken up to three times for a maximum of 3 credits toward this degree.

SUGGESTED COURSE SEQUENCE

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

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<td>MGMT 225</td>
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</table>

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MANAGEMENT

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0249 (Effective Fall 2003 - Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. The Certificate of Achievement is often used in conjunction with another degree in professions such as health careers or computers. Additional education enhances an individual's employment opportunities. Courses in this certificate may also be applied directly toward an Associate Degree in Management.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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MINIMUM TOTAL: 24 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 224</td>
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MANAGING FORWARD

CERTIFICATE OF COMPLETION

Curriculum Code: 1053 (Effective Fall 2003 - Summer 2006)

As each new generation of managers encounters a world changed, it must adapt and flex, push and explore. This curriculum seeks a new and re-energizing thinking and alternative approaches to managing/leading organizations. It is designed to serve a variety of constituents. Among those may be practitioners of Quality principles; those who yearn for additional or fresh ways of thinking, or those desiring to add a short but powerful certificate to their credentials. Courses in this curriculum may be used in many other Business curriculums.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS (See Note 1)

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<td>MGMT 300</td>
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<td>MGMT 332</td>
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<td>MGMT 345</td>
<td>Context and Transformation</td>
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MINIMUM TOTAL: 13 CREDITS

NOTES:
1. Students wishing to follow this curriculum are urged to contact a Management Program advisor early in their course work.
2. Students will take MGMT 101 three times for a total of 3 credits, choosing three different topics of specific interest. MGMT 101 will be offered several times a year with different topics. See the printed schedule book or the Course Offerings section of the LCC web site at lcc.edu for specific offerings each semester.
3. Independent Study is a capstone course in this curriculum. Students will take MGMT 235 and must see a Management Program advisor to develop assessment of outcomes strategy.

SUGGESTED COURSE SEQUENCE
Courses may be taken in any order with the exception of MGMT 235 which is a capstone course and must be taken last.
**SMALL BUSINESS MANAGEMENT**
**CERTIFICATE OF COMPLETION**

Curriculum Code: 0003 (Effective Fall 2003 - Summer 2006)

This program consists of practical, hands-on courses that provide students with the basic business knowledge and skills necessary to start a small business.

**PREREQUISITES**
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

**REQUIREMENTS**

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**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:**
- ACCG 100  Practical Accounting Non-Major
- ACCG 101  Accounting Info for Management

**CHOICE 2:**
- MSMT 223  Developing Supervisory Skills
- MSMT 244  Supervisory Management
- MSMT 254  How to Write a Business Plan

**CHOICE 3:**
- CABS 110  Intro to Microsoft Office
- CABS 103  Internet Basics for Non-Majors
- CABS 126  Excel
- MKTG 210  Marketing on the Internet

**MINIMUM TOTAL**

15

**NOTES:**
1. It is recommended that BUSN 191 be taken during the last semester of this certificate program. This capstone experience will result in a completed business plan.
2. Students may also choose up to 4 credits from the T.I.M.E. Series (MGMT 240 through MSMT 279) to fulfill this requirement.

**SUGGESTED COURSE SEQUENCE**

Students should contact the Small Business Management Program Advisor as soon as possible to plan this program. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact the advisor for help with adjustments.

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

Curriculum Code: 0190 (Effective Fall 2003 - Summer 2008)

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. Sales/marketing 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

Total: 18-19 Credits

Choice 1: General Education Core Areas (See Note 1) 10 Credits

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<tr>
<td>COMM 101</td>
<td>Communication Core Area</td>
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<td>BUS 200</td>
<td>Global Perspectives and Diversity Core Area</td>
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<td>MATH 220</td>
<td>Mathematics Core Area</td>
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<tr>
<td>SCIS 210</td>
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<tr>
<td>WRIT 210</td>
<td>Writing Core Area</td>
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Choice 2: Computer Related (See Note 2) 2-3 Credits

<table>
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<tr>
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<th>TITLE</th>
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<tbody>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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</tr>
<tr>
<td>CABS 110</td>
<td>Intro to Microoffice</td>
<td>3</td>
</tr>
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</table>

Choice 3: Sales/Marketing Related (See Note 2) 7 Credits

<table>
<thead>
<tr>
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<th>TITLE</th>
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<tbody>
<tr>
<td>ACG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
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<tr>
<td>ACG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 285</td>
<td>Business Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 228</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 101</td>
<td>Marketing Special Topics</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 131</td>
<td>Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 204</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 229</td>
<td>Public Relations</td>
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<tr>
<td>MKTG 235</td>
<td>Marketing Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 44 Credits

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for the Business, Core area.
2. Students may choose up to 4 credits of T.I.M.E. Series courses (MGMT 240 through MGMT 279). Students should confer with a Business Department program advisor to ensure that selection of Limited Choice courses will best fit their career plans.
3. MKTG 101 may be taken up to three times for a maximum of 3 credits toward this degree.

SUGGESTED COURSE SEQUENCE

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

<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 150</td>
<td>LEGL 215</td>
<td>MGMT 200</td>
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<td>MKTG 100</td>
<td>MGMT 234</td>
<td>MGMT 120</td>
<td>MGMT 225</td>
</tr>
<tr>
<td>SPCH 109</td>
<td>MKTG 210</td>
<td>MKTG 210</td>
<td>MKTG 235</td>
</tr>
<tr>
<td>WRT 127</td>
<td>MKTG 200</td>
<td>MKTG 220</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tr>
</tbody>
</table>

SALES SPECIALIST
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0242 (Effective Fall 2003 - Summer 2008)

Students in this curriculum begin to learn sales skills to enhance their performance on the job. Selling is more than getting a customer to buy a product. It is a system that involves understanding and meeting needs, educating on possibilities, and developing lasting relationships. A sales specialist may wish to go on to earn the Field Sales and Marketing Associate Degree.

REQUIREMENTS

Total: 18 Credits

<table>
<thead>
<tr>
<th>COURSE</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>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Manage Your Profess Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 208</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 109</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

Total: 11-12 Credits

Choice 1: Computer Related (See Note 1) 2-3 Credits

<table>
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<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>CABS 110</td>
<td>Intro to Microoffice</td>
<td>3</td>
</tr>
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</table>

Choice 2: Marketing Related (See Note 1) 10-11 Credits

<table>
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<th>COURSE</th>
<th>TITLE</th>
<th>CREDITS</th>
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<td>BUSN 118</td>
<td>MGMT 150</td>
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<td>MKTG 119</td>
<td>MKTG 200</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>SPCH 109</td>
<td>3</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 30 Credits

NOTE:
1. Choose any course with a MKTG prefix not already used to meet certificate requirements. Students should confer with a Marketing Program Advisor for best fit with career plans.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>MGMT 150</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>MKTG 200</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>SPCH 110</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is reviewed when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they wish to graduate.
## MARKETING

### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0224 (Effective Fall 2003 - Summer 2006)

Marketing is the set of activities that aims to satisfy the customer while making a profit. It is concerned with determining need and meeting demand by making goods and services known, available, and affordable. Entry-level personnel may require time in sales before internal promotion into marketing management positions. Graduates of this program are prepared to work in nearly every type of business and organization today. Traditional product marketing management is giving way to areas like nonprofit organization marketing, leading to a diverse job opportunity picture. **Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.**

### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Business Department, Old Central Building, Room 216, telephone number (517) 483-1522.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 100</td>
<td>Current Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 119</td>
<td>Manage/Manage Your Profess Image</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 130</td>
<td>Retailing</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 202</td>
<td>Managerial Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 204</td>
<td>Marketing Research</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 210</td>
<td>Marketing on the Internet</td>
<td>3</td>
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<tr>
<td>MGMT 220</td>
<td>Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Marketing Internship</td>
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</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRT 127</td>
<td>Business Writing</td>
<td>3</td>
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</table>

**TOTAL: 44 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: General Education Core Areas (7-9 Credits)

- Communication Core Area (See Note 1)
- Global Perspectives and Diversity Core Area (See Note 1)
- Mathematics Core Area 3-4
- Science Core Area 4-5
- Writing Core Area (See Note 1)

**TOTAL: 16-18 CREDITS**

#### CHOICE 2: Marketing Related (See Note 2) 9 Credits

- ACCG 210 Principles of Accounting I 4
- BUSN 201 International Business 3
- BUSN 204 Introduction to Investments 2
- BUSN 205 Small Business Management 3
- CABS 103 Internet Basics for Non-Majors 2
- CABS 110 Intro to Microsoft Office 3
- ECON 201 Principles of Economics-Macro 3
- ECON 203 Principles of Economics-Micro 3
- LEGS 215 Bus Law I. Basic Principles 3
- MGMT 150 Managing Customer Relations 3
- MGMT 200 Creative Thinking for Business 3
- MGMT 223 Developing Supervisory Skills 3
- MGMT 225 Team Development 3
- MGMT 345 Content and Transformation 3
- MGMT 101 Marketing Special Topics (See Note 3) 1
- MGMT 131 Merchandising 2
- MGMT 210 Marketing on the Internet 3
- MGMT 231 Independent Study in Marketing 1-3

**MINIMUM TOTAL: 60**

### NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may also choose up to 4 credits of T.I.M.E. Series courses (MGMT 240 through MGMT 275). Students should consult with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
3. MKTG 111 may be taken up to three times for a maximum of 3 credits toward this degree.

### SUGGESTED COURSE SEQUENCE

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

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<thead>
<tr>
<th>BUSN 118</th>
<th>MGMT 234</th>
<th>MGMT 120</th>
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<tr>
<td>MGMT 100</td>
<td>MGMT 120</td>
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<td>MGMT 119</td>
<td>MGMT 200</td>
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<td>Lin.Ch.</td>
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<td>WRT 127</td>
<td>MGMT 210</td>
<td>MGMT 229</td>
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<tr>
<td>Lim.Ch.</td>
<td>SPCH 110</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

### MARKETING CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0225 (Effective Fall 2003 - Summer 2006)

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

<table>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
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<td>MGMT 119</td>
<td>Manage/Manage Your Profess Image</td>
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<td>Sales</td>
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<td>MGMT 130</td>
<td>Retailing</td>
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<tr>
<td>MGMT 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 202</td>
<td>Management Related</td>
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</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRT 127</td>
<td>Business Writing</td>
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**TOTAL: 24 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: Marketing Related (See Note 1) 5 Credits

**MINIMUM TOTAL: 30**

### NOTE:

1. Choose any course with a MGMT prefix not already used to meet certificate requirements.

### SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>BUSN 118</th>
<th>MGMT 120</th>
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<tbody>
<tr>
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<td>MGMT 202</td>
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<tr>
<td>WRT 127</td>
<td>SPCH 110</td>
</tr>
<tr>
<td>Lin.Ch.</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated upon students applying for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
MEDI S TECHNOLOGY 2003-2005 Catalog Lansing Community College

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0184 (Effective Fall 2003 - Summer 2006)

Media Technology is an integrated program that prepares students for professional
orientations in video production, audio production, video and sound reinforcement positions
as well as in a variety of related fields. Radio professionals work in radio
programming, promotion, on-air/production and community service.
Not all courses in this program transfer to all colleges. Students
planning to transfer should see an academic advisor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prereq-

uire information. See the Assessment and Placement Testing section for skills
assessment and advising information.

INFORMATION
Contact the Visual Arts and Media Department, Academic and Office Facility,
Room 220A, telephone number (517) 453-1874.

REQUIREMENTS

<table>
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<th>REQUIREMENTS</th>
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<tr>
<td>MTEC 110</td>
<td>Intro Broadcast/Elec Media</td>
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<tr>
<td>MTEC 129</td>
<td>Audio Production I</td>
</tr>
<tr>
<td>MTEC 130</td>
<td>Radio Production I</td>
</tr>
<tr>
<td>MTEC 150</td>
<td>TV Production I</td>
</tr>
<tr>
<td>MTEC 229</td>
<td>Script/Copywriting for Media</td>
</tr>
<tr>
<td>MTEC 243</td>
<td>Ethics/Social Impact of Media</td>
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<tr>
<td>MTEC 255</td>
<td>Media Portfolio (See Note 1)</td>
</tr>
<tr>
<td>MTEC 296</td>
<td>Media Internship (See Note 2)</td>
</tr>
<tr>
<td>SPCH 129</td>
<td>Dynamics of Communication</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<td>MTEC 129</td>
<td>Audio Production I</td>
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<td>Radio Production I</td>
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<td>MTEC 150</td>
<td>TV Production I</td>
</tr>
<tr>
<td>MTEC 229</td>
<td>Script/Copywriting for Media</td>
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<tr>
<td>MTEC 243</td>
<td>Ethics/Social Impact of Media</td>
</tr>
<tr>
<td>MTEC 255</td>
<td>Media Portfolio (See Note 1)</td>
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<tr>
<td>MTEC 296</td>
<td>Media Internship (See Note 2)</td>
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<tr>
<td>SPCH 129</td>
<td>Dynamics of Communication</td>
</tr>
<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.

CHOICE 1: General Education Core Areas (See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

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<tr>
<th>CODE</th>
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<tr>
<td>COMM 101</td>
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<td>SC 101</td>
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<tr>
<td>WRIT 101</td>
<td>Writing Core Area</td>
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CHOICE 2: Media Specialty (Choose one subchoice)

Subchoice 2A: Audio/Video

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
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<td>Sound Reinforcement I</td>
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<td>MTEC 200</td>
<td>Audio Production II</td>
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<td>Audio Recording II</td>
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<td>MTEC 222</td>
<td>Sound Reinforcement Practicum (See Note 4)</td>
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<td>MTEC 290</td>
<td>Radio Production II</td>
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<tr>
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<td>Radio Workshop (See Note 5)</td>
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Subchoice 2B: Video/Television

<table>
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<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>MTEC 153</td>
<td>Video Post-Production Techniques</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 260</td>
<td>TV Production II</td>
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<tr>
<td>MTEC 261</td>
<td>Advanced Video Production</td>
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<tr>
<td>MTEC 262</td>
<td>Lighting for Television/Video</td>
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<tr>
<td>MTEC 264</td>
<td>Electronic Presentation Graphics</td>
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<tr>
<td>MTEC 265</td>
<td>Video Workshop (See Note 6)</td>
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</table>

Subchoice 2C: General Media Occupations (See Note 7)

CHOICE 3: Media-Related (See Note 8) | 4 Credits

MINIMUM CREDITS: 72

NOTES:

1. The Portfolio is a capstone course in this curriculum. All courses must be com-

pleted or taken concurrently with MTEC 285.

2. Enrollment in MTEC 296 will be limited to Media Technology majors who have

 successfully completed 75% of their MTEC course work.

3. Students completing REQUIREMENTS have fulfilled the requirements for this

 Core area.

4. MTEC 223 must be taken once toward the requirements of Subchoice 2A and

 may be repeated one additional time for a total of 4 credits toward this degree.

5. MTEC 232 must be taken once toward the requirements of Subchoice 2A and

 may be taken one additional time for a total of 4 credits toward this degree.

6. MTEC 255 must be taken once toward the requirements of Subchoice 2B and

 may be taken one additional time for a total of 4 credits toward this degree.

7. Credits must be taken from Subchoices 2A, 2B, and/or departmentally approved

 MTEC electives or other departmentally approved electives. Students following Subcho-

 se 2C must consult with a Media Technology Program Advisor regarding course

 selection.

8. Students must select courses with the approval of a Media Technology Program

 Advisor. This course allows students to select from additional Media courses (MTEC

 prefix) or from other courses that will augment their Media training.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to

 offer courses. Students who for any reason are unable to follow the course

 sequence suggested below (for example, those who are part-time, have trans-

 ferred in courses from another school, or have prerequisites to fulfill) should

 contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>MTEC 110</td>
<td>WRIT 121</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MTEC 130</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MTEC 150</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
MEDIA TECHNOLOGY

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 9967 (Effective Fall 2003 - Summer 2006)

This program consists of practical, hands-on courses that provide students with the necessary technical knowledge and skills needed for an entry-level position in the media technology industry. The certificate provides students wishing to enter the industry a fast-track route toward that goal. Students wishing to continue toward the Media Technology Associate in Applied Science Degree will find that all courses from this option will apply.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Visual Arts and Media Department, Academic and Office Facility, Room 208A, telephone number (517) 483-1574.

REQUIREMENTS

TOTAL: 16 CREDITS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTEC 110</td>
<td>Intro Broadcast/Elec Media</td>
<td></td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 130</td>
<td>Radio Production I</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 150</td>
<td>TV Production I</td>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 24 CREDITS

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

CHOICE 1: Media Technology (Choose one subchoice) 24 Credits

Subchoice 1A: Audio/Video

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTEC 121</td>
<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 220</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 252</td>
<td>Sound Reinforcement Practicum (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 230</td>
<td>Radio Production II</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 232</td>
<td>Radio Workshop (See Note 2)</td>
<td>2</td>
</tr>
</tbody>
</table>

Subchoice 1B: Video/Television

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTEC 150</td>
<td>Video Production Techniques</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 153</td>
<td>Video Post-Production Techniques</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 250</td>
<td>Television Studio Production</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 251</td>
<td>Electronic Field Production</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 252</td>
<td>Lighting for Television/Video</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 254</td>
<td>Television/Video Graphics</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 255</td>
<td>Video Workshop (See Note 3)</td>
<td>2</td>
</tr>
</tbody>
</table>

Subchoice 1C: General Media Occupations (See Note 4)

MINIMUM TOTAL

48

NOTES:
1. MTEC 225 must be taken once toward the requirements of Subchoice 1A and may be repeated one additional time for a total of 4 credits toward this certificate.
2. MTEC 232 must be taken once toward the requirements of Subchoice 1A and may be taken one additional time for a total of 4 credits toward this certificate.
3. MTEC 255 must be taken once toward the requirements of Subchoice 1B and may be taken one additional time for a total of 4 credits toward this certificate.
4. Credits must be taken from Subchoices 1A or 1B and/or departmentally approved MTEC electives or other departmentally approved electives. Students following Subchoice 1C must consult with a Media Technology Program Advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

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

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MTEC 110</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td>MTEC 130</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td>MTEC 150</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is triggered when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
## MOTION PICTURE DIRECTION

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 9502 (Effective Fall 2003 - Summer 2006)

Motion pictures bring together elements from all the other arts: writing, photography, theater, music, dance and all the visual arts. The Motion Picture Direction program gives students extensive practical experience working with other artists and technicians to create dramatic, documentary, experimental, or animated films. The degree is designed for students who wish to become screenwriters, directors, and film editors, the people who guide the film story-telling process. Entry-level jobs include production assistants as well as apprentices and interns in specialized roles with independent film production companies, advertising firms, and major film studios. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

### PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION
Contact the Visual Arts and Media Department, Academic and Office Facility, Room 298A, telephone number (517) 463-1574.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>Design &amp; Communication</td>
<td>3</td>
</tr>
<tr>
<td>FILM 118</td>
<td>Film Production I</td>
<td>4</td>
</tr>
<tr>
<td>FILM 220</td>
<td>Screenwriting</td>
<td>3</td>
</tr>
<tr>
<td>FILM 226</td>
<td>Production II</td>
<td>4</td>
</tr>
<tr>
<td>FILM 227</td>
<td>Film Production III</td>
<td>4</td>
</tr>
<tr>
<td>FILM 290</td>
<td>Motion Picture Portfolio (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 101</td>
<td>Basic Photog for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>THEA 120</td>
<td>Introduction to Acting</td>
<td>2</td>
</tr>
<tr>
<td>THEA 140</td>
<td>Acting for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>THEA 150</td>
<td>Acting for the Camera</td>
<td>3</td>
</tr>
<tr>
<td>THEA 220</td>
<td>Directing</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL: 35 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

### CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Core Area</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area (See Note 2)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>4-5</td>
</tr>
<tr>
<td>Writing Core Area (See Note 2)</td>
<td>0</td>
</tr>
</tbody>
</table>

**TOTAL: 10-13 CREDITS**

### CHOICE 2: Techniques and Technology

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 105</td>
<td>Adobe Photoshop Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 109</td>
<td>Digital Video Concepts for Artists</td>
<td>1</td>
</tr>
<tr>
<td>FILM 209</td>
<td>Topics in Film/Animation</td>
<td>3</td>
</tr>
<tr>
<td>FILM 291</td>
<td>Motion Picture Internship (See Note 3)</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 152</td>
<td>Video Production Techniques</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 153</td>
<td>Video Post-Production Techniques</td>
<td>4</td>
</tr>
<tr>
<td>STEC 145</td>
<td>Theatrical Make-Up/Wardrobe</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 202</td>
<td>Creative Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 15 CREDITS**

### NOTES:
1. Enrollment in FILM 290 will be limited to Motion Picture Production Majors who have successfully completed 75% of their FILM course work.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Enrollment in FILM 291 will be limited to Motion Picture Production Majors who have successfully completed 75% of their FILM course work.
4. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Visual Arts and Media Department prior to registration.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>ARTS 102, FILM 220</td>
<td>3-4</td>
</tr>
<tr>
<td>II</td>
<td>FILM 118, FILM 150</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>THEA 120, THEA 140</td>
<td>3</td>
</tr>
<tr>
<td>IV</td>
<td>WRIT 121</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL: 35 CREDITS**

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**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initialed when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**

166 LANSING COMMUNITY COLLEGE CATALOG 2003-2005
MOTION PICTURE PRODUCTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0902 (Effective Fall 2003 - Summer 2006)

Since the first film screening in 1895, motion pictures have grown into one of the world's most influential communication media and the United States' second largest export. The Motion Picture Production degree gives students extensive hands-on experience in creative and technical filmmaking skills, and provides the opportunity to build a demonstration reel showcasing a student's ability. Filmmakers usually work in teams, each member specializing in one area such as cinematography, sound recording, lighting, special effects, or animation. While most films are produced by California companies, there are motion pictures made in every state. Filmmakers may work as independent contractors or find employment in companies that rent facilities, sell equipment, or contract services for film productions. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Visual Arts and Media Department, Academic and Office Facility, Room 298A, telephone number (517) 483-1574.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 28 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>ARTS 102</td>
<td>Design &amp; Communication</td>
</tr>
<tr>
<td>FILM 118</td>
<td>Film Production I</td>
</tr>
<tr>
<td>FILM 227</td>
<td>Film Production II</td>
</tr>
<tr>
<td>FILM 237</td>
<td>Film Production III</td>
</tr>
<tr>
<td>IMAG 101</td>
<td>Basic Photography</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
</tr>
<tr>
<td>MTEC 152</td>
<td>Video Production Techniques</td>
</tr>
<tr>
<td>MTEC 252</td>
<td>Lighting for Television/Video</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 34-40 CREDITS</th>
</tr>
</thead>
</table>
| Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Area

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 101</td>
<td>Communication Core Area (See Note 1)</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
<tr>
<td>COMM 112</td>
<td>Mathematics Core Area</td>
</tr>
<tr>
<td>ARTS 105</td>
<td>Science Core Area</td>
</tr>
<tr>
<td>ENGL 110</td>
<td>Writing Core Area</td>
</tr>
</tbody>
</table>

13-17 Credits

CHOICE 2: Technical and Technology

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>Adobe Photoshop Non-Majors</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Adobe Illustrator for Artists</td>
</tr>
<tr>
<td>BUSN 200</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>BUSN 202</td>
<td>Electrical Safety Practices</td>
</tr>
<tr>
<td>ARTS 200</td>
<td>Video Production Techniques</td>
</tr>
<tr>
<td>ARTS 201</td>
<td>Intro to Stage Tech Industry</td>
</tr>
<tr>
<td>ARTS 202</td>
<td>Stage Lighting and Electricity</td>
</tr>
<tr>
<td>ARTS 203</td>
<td>Technical Make-Up/Wardrobe</td>
</tr>
<tr>
<td>ARTS 204</td>
<td>Stage and Arena Rigging</td>
</tr>
</tbody>
</table>

15 Credits

CHOICE 3: Social Issues

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 201</td>
<td>The Film as Art</td>
</tr>
<tr>
<td>MTEC 245</td>
<td>Ethics/Social Impact of Media (See Note 2)</td>
</tr>
</tbody>
</table>

3-4 Credits

CHOICE 4: Capstone Experience

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILM 231</td>
<td>Motion Picture Internship (See Note 3)</td>
</tr>
<tr>
<td>FILM 240</td>
<td>Motion Picture Portfolio (See Note 4)</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 62

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Visual Arts and Media Department prior to registration.
3. Enrollment in FILM 231 will be limited to Motion Picture Production Majors who have successfully completed 75% of their FILM course work.
4. Enrollment in FILM 240 will be limited to Motion Picture Production Majors who have successfully completed 75% of their FILM course work.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>FILM 226</td>
</tr>
<tr>
<td>FILM 118</td>
<td>MTEC 192</td>
</tr>
<tr>
<td>IMAG 101</td>
<td>MTEC 252</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Lim Ch.</td>
</tr>
<tr>
<td>MTEC 252</td>
<td>Lim Ch.</td>
</tr>
</tbody>
</table>

MOTION PICTURE PRODUCTION CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0901 (Effective Fall 2003 - Summer 2006)

This program is designed for students who already have a degree or who are completing a degree in another area and wish to gain technical and creative hands-on experience to build a demonstration reel showcasing their skills.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILM 118</td>
<td>Film Production I</td>
</tr>
<tr>
<td>FILM 227</td>
<td>Film Production III</td>
</tr>
<tr>
<td>IMAG 101</td>
<td>Basic Photography</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
</tr>
<tr>
<td>MTEC 152</td>
<td>Video Production Techniques</td>
</tr>
<tr>
<td>MTEC 252</td>
<td>Lighting for Television/Video</td>
</tr>
</tbody>
</table>

19 Credits

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
</table>
| Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Technical and Technology

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>Adobe Photoshop Non-Majors</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Adobe Illustrator for Artists</td>
</tr>
<tr>
<td>BUSN 200</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>BUSN 202</td>
<td>Electrical Safety Practices</td>
</tr>
<tr>
<td>ARTS 200</td>
<td>Video Production Techniques</td>
</tr>
<tr>
<td>ARTS 201</td>
<td>Intro to Stage Tech Industry</td>
</tr>
<tr>
<td>ARTS 202</td>
<td>Stage Lighting and Electricity</td>
</tr>
<tr>
<td>ARTS 203</td>
<td>Technical Make-Up/Wardrobe</td>
</tr>
<tr>
<td>ARTS 204</td>
<td>Stage and Arena Rigging</td>
</tr>
</tbody>
</table>

19 Credits

CHOICE 2: Social Issues

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 201</td>
<td>The Film as Art</td>
</tr>
<tr>
<td>MTEC 245</td>
<td>Ethics/Social Impact of Media (See Note 2)</td>
</tr>
</tbody>
</table>

3-4 Credits

CHOICE 3: Social Issues

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILM 118</td>
<td>FILM 226</td>
</tr>
<tr>
<td>IMAG 101</td>
<td>MTEC 192</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>MTEC 252</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 34

NOTE:
1. Enrollment in FILM 231 will be limited to Motion Picture Production Majors who have successfully completed 75% of their FILM course work.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILM 118</td>
<td>FILM 226</td>
</tr>
<tr>
<td>IMAG 101</td>
<td>MTEC 192</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>MTEC 252</td>
</tr>
<tr>
<td>Lim Ch.</td>
<td>Lim Ch.</td>
</tr>
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</table>
ADMINISTRATIVE OFFICE MGMT ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 1044 (Effective Fall 2003 - Summer 2008)

The Administrative Office Management Program provides Office Administration graduates and practicing office professionals, as well as those returning to the workforce after an absence, the opportunity to enhance their skills, increase their employability, and advance in their careers. The Administrative Office Management Associate in Business Degree builds on the course work provided in the Certificate of Achievement and will enhance a student's employment opportunities in this field. Graduates of the program are prepared to work as an office manager or administrative supervisor in an office setting. Although specific functions vary considerably, most office managers establish and monitor office procedures and policies; coordinate and supervise the work of their staff; evaluate employee performance; interview, hire, and train new employees; manage long-term projects; prepare progress and departmental performance reports; order and maintain office equipment; and generally act as the primary liaison between support staff and managerial staff. 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 Course Descriptions or Course Offerings for course prerequisites before enrolling. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

REQUIREMENTS

TOTAL: 49 CREDITS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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</tr>
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<tbody>
<tr>
<td>ACGG 100</td>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
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<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<tr>
<td>CABS 205</td>
<td>Using Project Mgmt Software</td>
<td>2</td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
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</tr>
<tr>
<td>LEGL 215</td>
<td>Bus Law I - Business Principles</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
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<tr>
<td>MGMT 202</td>
<td>Developing Supervisory Skills</td>
<td>3</td>
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<tr>
<td>MGMT 210</td>
<td>Principles of Marketing</td>
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<tr>
<td>OADM 105</td>
<td>Employability Skills</td>
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<tr>
<td>OADM 195</td>
<td>Human Relations in Work Place</td>
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<tr>
<td>OADM 216</td>
<td>Information Records Mgmt II</td>
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<tr>
<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
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<tr>
<td>OADM 240</td>
<td>Office Internship (See Note 1)</td>
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<tr>
<td>OADM 275</td>
<td>Diversity in Business</td>
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</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Commun. in the Workplace</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 18-20 CREDITS

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

CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 2) | 0
- Global Perspectives and Diversity Core Area (See Note 2) | 0
- Mathematics Core Area (See Note 2) | 0
- Science Core Area | 4-5
- Writing Core Area (See Note 2) | 0

CHOICE 2: Office Management Options

- LABC 204 Employment Law for Managers | 3
- MGMT 234 Human Resource Management | 3
- MGMT 235 Principles of Management | 3
- MGMT 277 Training Development for Busn | 3
- MGMT 281 Team Development | 3
- MGMT 289 Time and Stress Management | 3

CHOICE 3: Computer Related

- CABS 110 Microsoft Office | 3
- CABS 119 Microsoft Word | 3
- CABS 126 Excel | 3
- OADM 168 Input Technologies/Business | 2

MINIMUM TOTAL

67

NOTES:

1. Internship is considered the capstone course in this curriculum. Students must have Department Approval to enroll concurrently in OADM 105 to enroll in internship.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<td>WRIT 127</td>
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<td>Limit. Ch.3</td>
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<td>Limit. Ch.3</td>
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<td>Limit. Ch.2</td>
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ADMINISTRATIVE OFFICE MGMT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1049 (Effective Fall 2003 - Summer 2008)

The Administrative Office Management Program provides Office Administration graduates and practicing office professionals, as well as those returning to the workforce after an absence, the opportunity to enhance their skills, increase their employability, and advance in their careers. The Certificate of Achievement builds on the basic course work provided in the Certificate of Completion and will enhance a students employment opportunities. In this field. Graduates of the program are prepared to work as an office manager or administrative supervisor in an office setting. All course work in this certificate will apply toward completion of the Administrative Office Management Associate in Business Degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

REQUIREMENTS

<table>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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</tr>
<tr>
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<td>Utilizing Project Mgmt Software</td>
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<td>MGMT 223</td>
<td>Developing Supervisory Skills</td>
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<td>OADM 105</td>
<td>Employability Skills</td>
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<td>OADM 195</td>
<td>Human Relations in Work Place</td>
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<td>OADM 216</td>
<td>Information Records Mgmt</td>
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<tr>
<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
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<td>OADM 240</td>
<td>Office Internship (See Note 1)</td>
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<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Computer Related

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<thead>
<tr>
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<td>Excel</td>
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<td>OADM 108</td>
<td>Information Technology/Bus.</td>
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</table>

LIMITED TOTAL: 2-3 CREDITS

NOTE:
1. Internship is considered the capstone course in this curriculum. Students must have Department Approval and enroll concurrently in OADM 105 to enroll in Internship.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
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<tr>
<td>OADM 220</td>
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</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is issued when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

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LEGAL OFFICE ADMINISTRATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0207 (Effective Fall 2003 - Summer 2006)

The Legal Office Administration Program prepares students to work as a legal secretary in law offices, courts, public agencies, and in legal departments of larger businesses and organizations. The Legal Office Administration Associate in Business degree builds on the course work provided in the Certificate of Achievement and will enhance a student’s employment opportunities in this field. Legal secretaries are an important part of a legal team and typically report to one or more attorneys. Legal secretaries are skilled in the use of computers and the preparation of legal documents. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

REQUIREMENTS (See Note 1) TOTAL: 65 CREDITS

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<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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</tr>
<tr>
<td>CABS 119</td>
<td>Microsoft Word</td>
<td>3</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
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</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 115</td>
<td>Legal Assistant Career/Ethics</td>
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</tr>
<tr>
<td>LEGL 210</td>
<td>Litigation Procedures</td>
<td>4</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Bus Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 105</td>
<td>Employability Skills</td>
<td>1</td>
</tr>
<tr>
<td>OADM 108</td>
<td>Legal Technologies/Business</td>
<td>2</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Relations in Work Place</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
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</tr>
<tr>
<td>OADM 206</td>
<td>Legal Vocabulary/Transcription</td>
<td>3</td>
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<tr>
<td>OADM 208</td>
<td>Legal Citations/Document Prep</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Information Records Mgmt I</td>
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<td>OADM 275</td>
<td>Diversity in Business</td>
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<td>OADM 291</td>
<td>Office Systems: Capstone</td>
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<td>SPCH 110</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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LIMITED CHOICE REQUIREMENTS TOTAL: 4-5 CREDITS

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

CHOICE 1: General Education Core Areas 4-5 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

Communication Core Area (See Note 2) 0
Global Perspectives and Diversity Core Area (See Note 2) 0
Mathematics Core Area (See Note 2) 0
Science Core Area 4-5
Writing Core Area (See Note 2) 0

MINIMUM TOTAL 69

NOTES:
1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 Seminar, CABS 101, CABS 104, CABS 105, or CABS 195.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. This curriculum requires that students complete all courses with a grade of 2.0 or higher for graduation.

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

Curriculum Code: 1042 (Effective Fall 2003 - Summer 2008)

The Legal Office Administration Program prepares students to work as a legal secretary in law offices, courts, public agencies, and in legal departments of larger businesses and organizations. The Certificate of Achievement builds on the basic coursework provided in the Certificate of Completion and will enhance a student's employment opportunities in this field. All courses will apply toward completion of the Legal Office Administration Associate in Business Degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

REQUIREMENTS (See Note 1) TOTAL: 36 CREDITS

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<td>CABS 119</td>
<td>Microsoft Word</td>
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<tr>
<td>CABS 126</td>
<td>Excel</td>
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<tr>
<td>CABS 130</td>
<td>Microsoft Access Database</td>
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<td>LEGL 115</td>
<td>Legal Assistant Career/Ethics</td>
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<td>LEGL 215</td>
<td>Bus Law I, Basic Principles</td>
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</tr>
<tr>
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<td>Editing Business Documents</td>
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</tr>
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<td>OADM 105</td>
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<td>OADM 108</td>
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</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>3</td>
</tr>
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<td>OADM 206</td>
<td>Legal Vocabulary/Transcription</td>
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</tr>
<tr>
<td>OADM 208</td>
<td>Legal Citations/Document Prep</td>
<td>3</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>2</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
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</table>

MINIMUM TOTAL 36

NOTE:
1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from previous work or life experience, CABS 100 seminars, CABS 101, CABS 104, CABS 106, or CABS 105.

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

<table>
<thead>
<tr>
<th>I</th>
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<td>CABS 126</td>
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<td>OADM 203</td>
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LEGAL OFFICE ADMINISTRATION
CERTIFICATE OF COMPLETION

Curriculum Code: 1054 (Effective Fall 2003 - Summer 2008)

The Legal Office Administration Program prepares students to work as a secretary in law offices, courts, public agencies, and in legal departments of larger businesses and organizations. The Certificate of Completion provides basic course work for this program and will prepare students for an entry-level position in this field. All course work in this certificate will apply toward completion of the Legal Office Administration Certificate of Achievement and Associate in Business Degree which students are encouraged to complete for enhanced employment opportunities in this field.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

REQUIREMENTS (See Note 1) TOTAL: 15 CREDITS

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<tr>
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<tr>
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<tr>
<td>CABS 119</td>
<td>Microsoft Word</td>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
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<td>OADM 108</td>
<td>Input Technologies/Business</td>
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<tr>
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MINIMUM TOTAL 15

NOTE:
1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104, CABS 105, or CABS 106, or CABS 108.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who have any reason to be unable to follow the course sequence suggested below (for example, those who are part-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>BUSN 118</td>
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<td>CABS 119</td>
<td>CABS 126</td>
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<td>OADM 102</td>
<td>CABS 133</td>
<td>OADM 240</td>
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<td>OADM 108</td>
<td>LEGL 115</td>
<td>WRIT 127</td>
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# MEDICAL OFFICE ADMINISTRATION

## ASSOCIATE IN BUSINESS DEGREE

**Curriculum Code:** 0185  (Effective Fall 2003 - Summer 2006)

The Medical Office Administration Program prepares students to work as a member of administrative support staff in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, and other private and public sector healthcare settings. The Medical Office Administration Associate in Business degree builds on the coursework in the Certificate of Achievement and enhances a student's employment opportunities in this field. The Medical Administrative Assistant is a specialist in the healthcare profession. Medical administrative assistants facilitate the work of physicians, researchers, and other health team professionals by managing health information, transcribing medical dictation, coding and billing for medical procedures, scheduling appointments and procedures, and arranging patient hospitalizations. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

## INFORMATION

Contact the Office Administration Program, Office Unit B, Telephone number (517) 482-1697.

<table>
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<th>COURSE</th>
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<td>Internet Basics for Non-Majors</td>
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<td>CAB 119</td>
<td>Microsoft Word</td>
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<td>CHSE 123</td>
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<tr>
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<td>OAOM 102</td>
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<td>OAOM 105</td>
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<td>OAOM 108</td>
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<td>OAOM 195</td>
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<td>OAOM 198</td>
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<td>3</td>
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<tr>
<td>OAOM 203</td>
<td>Professional Office Procedures</td>
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<tr>
<td>OAOM 219</td>
<td>Medical Coding Concepts</td>
<td>3</td>
</tr>
<tr>
<td>OAOM 215</td>
<td>Information Records Mgmt I</td>
<td>3</td>
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<td>Admin Mgmt in Organizations</td>
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<td>OAOM 223</td>
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<td>OAOM 279</td>
<td>Diversity in Business</td>
<td>3</td>
</tr>
<tr>
<td>OAOM 291</td>
<td>Office Systems Capstone</td>
<td>3</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: General Education Core Areas 0 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 2) 0
- Global Perspectives and Diversity Core Area (See Note 2) 0
- Mathematics Core Area (See Note 2) 0
- Science Core Area (See Note 2) 0
- Writing Core Area (See Note 2) 0

**MINIMUM TOTAL** 68

**NOTES:**

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 101, CABS 102, CABS 105, or CAB 106.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. The curriculum requires that students complete all courses with a grade of 2.0 or higher for graduation.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Cabol</th>
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<th>MATH 117</th>
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<td>CAB 105</td>
<td>CAB 106</td>
<td>MATH 117</td>
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<tr>
<td>WRIT 127</td>
<td>WRIT 128</td>
<td>WRIT 129</td>
<td>MATH 117</td>
</tr>
</tbody>
</table>
**MEDICAL OFFICE ADMINISTRATION**

**CERTIFICATE OF ACHIEVEMENT**

**Curriculum Code: 1051 (Effective Fall 2003 - Summer 2003)**

The Medical Office Administration Program prepares students to work as a member of administrative support staff in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, and other private and public sector healthcare settings. The Certificate of Achievement builds on the basic course work in the Certificate of Completion and enhances a student's employment opportunities in this field. All course work will apply toward completion of the Medical Office Administration Associate in Business Degree.

**REQUIREMENTS**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

**REQUIREMENTS (See Note 1)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>BIOL 145</td>
<td>Introductory AN &amp; Physiology</td>
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<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>4</td>
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<tr>
<td>CABS 118</td>
<td>Microsoft Word</td>
<td>3</td>
</tr>
<tr>
<td>CABS 128</td>
<td>Microsoft Access Database</td>
<td>3</td>
</tr>
<tr>
<td>CABS 129</td>
<td>Medical Insurance Billing I</td>
<td>2</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 105</td>
<td>Employability Skills</td>
<td>1</td>
</tr>
<tr>
<td>OADM 108</td>
<td>Input Technologies/Business</td>
<td>2</td>
</tr>
<tr>
<td>OADM 197</td>
<td>Medical Vocabulary</td>
<td>3</td>
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<tr>
<td>OADM 198</td>
<td>Health Information Management</td>
<td>3</td>
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<td>OADM 203</td>
<td>Professional Office Procedures</td>
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<tr>
<td>OADM 210</td>
<td>Medical Coding Concepts</td>
<td>2</td>
</tr>
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<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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**MINIMUM TOTAL**

<table>
<thead>
<tr>
<th></th>
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</tr>
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</table>

**NOTES:**

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 Seminars, CABS 101, CABS 104, CABS 106, or CABS 195.
2. Students must complete all courses with a grade of 2.0 or higher to receive this certificate of achievement.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>
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<tbody>
<tr>
<td>BIOL 145</td>
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<td>CABS 130</td>
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<td>CABS 103</td>
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<td>OADM 108</td>
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<td>OADM 240</td>
</tr>
<tr>
<td>OADM 197</td>
<td>WRIT 127</td>
<td></td>
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</tbody>
</table>

**MEDICAL OFFICE ADMINISTRATION**

**CERTIFICATE OF COMPLETION**

**Curriculum Code: 1059 (Effective Fall 2003 - Summer 2003)**

The Medical Office Administration Program prepares students to work as a member of administrative support staff in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, and other private and public sector healthcare settings. The Certificate of Completion provides the basic course work in this program and prepares students for entry-level employment in this field. All course work in this certificate will apply toward completion of the Medical Office Administration Certificate of Achievement and Associates in Business Degree.

**REQUIREMENTS**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Information Technology and Office Systems Department, Old Central Building, Room 137, telephone number (517) 483-1546.

**REQUIREMENTS (See Note 1)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOL 145</td>
<td>Introductory AN &amp; Physiology</td>
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<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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<td>CABS 118</td>
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<td>CABS 128</td>
<td>Microsoft Access Database</td>
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<td>Input Technologies/Business</td>
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</tr>
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<td>OADM 197</td>
<td>Medical Vocabulary</td>
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**MINIMUM TOTAL**

<table>
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**NOTE:**

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 Seminars, CABS 101, CABS 104, CABS 106, or CABS 195.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>I</th>
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</thead>
<tbody>
<tr>
<td>BIOL 145</td>
<td>CABS 119</td>
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<td>CABS 103</td>
<td>CABS 105</td>
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<td>OADM 108</td>
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</tr>
<tr>
<td>OADM 197</td>
<td>WRIT 127</td>
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</table>
**MEDICAL TRANSCRIPTION ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0756 (Effective Fall 2003 - Summer 2008)

The Medical Transcription Program prepares students to work as a member of administrative support staff in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, managed transcription services, and home office settings. The Medical Transcription Associate in Business degree builds on the coursework provided in the Certificate of Achievement and enhances students' employability opportunities in this field. A Medical Transcriptionist is a medical language specialist who interprets and transcribes dictation by physicians and other health care professionals in order to document patient care and facilitate delivery of healthcare services. Transcription areas may include patient assessment, workup, therapeutic procedures, clinical courses, diagnosis, and prognosis. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

Students should consult Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**INFORMATION**

Contact the Office of Administration, Office Unit 3, telephone number (517) 483-1567.

**REQUIREMENTS** (See Note 1)  
**TOTAL: 68 CREDITS**

<table>
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<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<tr>
<td>BIOL 145</td>
<td>Introduction to Anatomy &amp; Physiology</td>
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<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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<tr>
<td>CABS 119</td>
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<td>CABS 126</td>
<td>Excel</td>
<td>3</td>
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<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<tr>
<td>MATH 117</td>
<td>Math for Business</td>
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<tr>
<td>OADM 102</td>
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<tr>
<td>OADM 106</td>
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<td>OADM 108</td>
<td>Computer Programming</td>
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<td>OADM 195</td>
<td>Human Relations in Work Place</td>
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<td>Medical Vocabulary</td>
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</tr>
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<td>OADM 198</td>
<td>Health Information Management</td>
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<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
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<tr>
<td>OADM 210</td>
<td>Medical Coding Concepts</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Information Records Management</td>
<td>3</td>
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<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
<td>3</td>
</tr>
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<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
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<td>OADM 228</td>
<td>Financial Mgmt in Health Care</td>
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<td>OADM 249</td>
<td>Ethics</td>
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<td>OADM 257</td>
<td>Diversity in Business</td>
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<td>OADM 293</td>
<td>Office Systems Capstone</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
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</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**  
**TOTAL: 6 CREDITS**

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

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

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 2)
- Global Perspectives and Diversity Core Area (See Note 2)
- Mathematics Core Area (See Note 2)
- Science Core Area (See Note 2)
- Writing Core Area (See Note 2)

**MINIMUM TOTAL**  
68

**NOTES:**

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminar, CABS 103, CABS 104, CABS 105, or CABS 195.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. This curriculum requires that students complete all courses with a grade of 2.0 or higher for graduation.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>BIOL 145</th>
<th>CABS 133</th>
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<th>MATH 117</th>
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<td>OADM 275</td>
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<td>OADM 197</td>
<td>WRIT 127</td>
<td>SPCH 110</td>
<td>OADM 291</td>
</tr>
</tbody>
</table>

**Students are responsible for consulting all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**
MEDICAL TRANSCRIPTION
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0958 (Effective Fall 2003 - Summer 2008)

The Medical Transcription Program prepares students to work as a member of administrative support staff in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, managed transcription services, and home office settings. The Certificate of Achievement builds on the basic coursework provided in the Certificate of Completion and enhances a student's employment opportunities in this field. All course work in this certificate will apply toward completion of the Medical Transcription Associate in Business degree.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Office Administration Program, Office Unit B, telephone number (517) 493-1587.

REQUIREMENTS (See Note 1)
TOTAL: 37 CREDITS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CRedit HOURS</th>
</tr>
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<tr>
<td>BIO1 145</td>
<td>Introductory Anat &amp; Physiology</td>
<td>4</td>
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<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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<tr>
<td>CABS 119</td>
<td>Microsoft Word</td>
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</tr>
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<td>CABS 123</td>
<td>Microsoft Access Database</td>
<td>3</td>
</tr>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
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</tr>
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<td>OADM 105</td>
<td>Employability Skills</td>
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</tr>
<tr>
<td>OADM 108</td>
<td>Input Technologies/Business</td>
<td>2</td>
</tr>
<tr>
<td>OADM 197</td>
<td>Medical Vocabulary</td>
<td>3</td>
</tr>
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<td>OADM 198</td>
<td>Health Information/Mgmt</td>
<td>3</td>
</tr>
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<td>Professional Office Procedures</td>
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<td>OADM 237</td>
<td>Medical Transcription</td>
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</tr>
<tr>
<td>OADM 252</td>
<td>Advanced Medical Transcription</td>
<td>3</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>2</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 37

NOTE:
1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience. CABS 100 seminars, CABS 101, CABS 104, CABS 106, or CABS 115.
2. Students must complete all courses with a grade of 2.0 or higher to receive this certificate of achievement.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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>BIOL 145</th>
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<td>OADM 105</td>
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<td></td>
</tr>
<tr>
<td>OADM 197</td>
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</tr>
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</table>
## OFFICE ADMINISTRATION

### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0114 (Effective Fall 2003 - Summer 2006)

The Office Administration Program prepares students to work as an administrative secretary, administrative assistant, or executive secretary in an office setting. The Office Administration Associate in Business degree builds on the course work provided in the Certificate of Achievement and will enhance a student’s employment opportunities in this field. In addition to their traditional role, today’s office professional is responsible for coordinating a variety of office functions including communication, research, training and orientation of staff, budgeting and financial analysis, records management, and new office technology operation and troubleshooting. **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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Office Administration Program, Office UHl B, telephone number (517) 483-1387.

### REQUIREMENTS (See Note 1)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACG 100</td>
<td>Practical Accounting-Non-Major</td>
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</tr>
<tr>
<td>BUSN 118</td>
<td>Intro to Business</td>
<td>3</td>
</tr>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>CABS 119</td>
<td>Microsoft Word</td>
<td>3</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>3</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>3</td>
</tr>
<tr>
<td>CABS 205</td>
<td>Using Project Mgmt Software</td>
<td>2</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 105</td>
<td>Employability Skills</td>
<td>1</td>
</tr>
<tr>
<td>OADM 109</td>
<td>Input Technologies/Business</td>
<td>2</td>
</tr>
<tr>
<td>OADM 155</td>
<td>Human Relations in Work Place</td>
<td>2</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Information Records Mgmt I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Information Records Mgmt II</td>
<td>3</td>
</tr>
<tr>
<td>OADM 230</td>
<td>Admin Mgmt in Organizations</td>
<td>3</td>
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<tr>
<td>OADM 240</td>
<td>Office Internships</td>
<td>2</td>
</tr>
<tr>
<td>OADM 255</td>
<td>Diversity in Business</td>
<td>3</td>
</tr>
<tr>
<td>OADM 291</td>
<td>Office Systems Capstone</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 57 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where applicable, are available for each core area.)

<table>
<thead>
<tr>
<th>Area</th>
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</thead>
<tbody>
<tr>
<td>Communication Core Area (See Note 2)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
<td>0</td>
</tr>
<tr>
<td>Mathematics Core Area (See Note 2)</td>
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<tr>
<td>Science Core Area</td>
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<tr>
<td>Writing Core Area (See Note 2)</td>
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</tbody>
</table>

**TOTAL: 4-5 CREDITS**

#### CHOICE 2: Computer Related

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CABS 126</td>
<td>Excel-Advanced</td>
<td>3</td>
</tr>
<tr>
<td>CABS 182</td>
<td>Microsoft PowerPoint</td>
<td>3</td>
</tr>
<tr>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
<td>3</td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL: 2-3 CREDITS**

**MINIMUM TOTAL: 63**

### NOTES:

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience. CABS 101, 102, 103, 104, 105, or 106 is required.
2. Students completing REQUIREMENTS have fulfilled the requirements for this CORE area.
3. This curriculum requires that students complete all courses with a grade of 2.0 or higher for graduation.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CABS 103</td>
<td>ACC 100</td>
<td>BUSN 118</td>
</tr>
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<td>CABS 119</td>
<td>CABS 126</td>
<td>OADM 216</td>
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<td>CABS 133</td>
<td>OADM 106</td>
<td>OADM 242</td>
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<td>OADM 102</td>
<td>OADM 215</td>
<td>OADM 291</td>
</tr>
<tr>
<td>OADM 106</td>
<td>WRIT 127</td>
<td>SPCH 110</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
### Office Administration

**Certificate of Achievement**

Curriculum Code: 0724 (Effective Fall 2003 - Summer 2005)

The Office Administration Program prepares students to work as a secretary in an office setting. The Certificate of Achievement builds on the basic course work provided in the Certificate of Completion and will enhance a student's employment opportunities in this field. All course work will apply toward completion of the Office Administration Associate in Business Degree.

#### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

#### INFORMATION

Contact the Office Administration Program, Office Unit E, telephone number (517) 483-1397.

#### REQUIREMENTS

(See Note 1)

<table>
<thead>
<tr>
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<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CABS 119</td>
<td>Microsoft Word</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
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<tr>
<td>OADM 105</td>
<td>Employability Skills</td>
<td>1</td>
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<tr>
<td>OADM 109</td>
<td>Input Technologies/Business</td>
<td>2</td>
<td></td>
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<tr>
<td>OADM 195</td>
<td>Human Relations in Work Place</td>
<td>2</td>
<td></td>
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<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>2</td>
<td></td>
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<tr>
<td>OADM 215</td>
<td>Information Records Mgmt I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
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<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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#### LIMITED CHOICE REQUIREMENTS

(See Note 1)

<table>
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<tr>
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<th>TITLE</th>
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<th>TOTAL: 2-3 CREDITS</th>
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<tbody>
<tr>
<td>CABS 129</td>
<td>Excel-Advanced</td>
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<td></td>
</tr>
<tr>
<td>CABS 162</td>
<td>Microsoft PowerPoint/Windows</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
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#### MINIMUM TOTAL

<table>
<thead>
<tr>
<th></th>
<th>35</th>
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</table>

#### NOTES:

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 103 seminars, CABS 101, CABS 104, CABS 106, or CABS 195.
2. Students must complete all courses with a grade of 2.0 or higher to receive this certificate of achievement.

#### SUGGESTED COURSE SEQUENCE

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

**I**

<table>
<thead>
<tr>
<th>CABS 103</th>
<th>CABS 126</th>
<th>BUSN 118</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 119</td>
<td>OADM 195</td>
<td>OADM 105</td>
</tr>
<tr>
<td>CABS 133</td>
<td>OADM 215</td>
<td>OADM 240</td>
</tr>
<tr>
<td>OADM 102</td>
<td>WRIT 127</td>
<td></td>
</tr>
<tr>
<td>OADM 106</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
<tr>
<td>OADM 253</td>
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</tbody>
</table>

**II**

**III**

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is issued when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
INFORMATION AND RECORDS MGMT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0165 (Effective Fall 2003 - Summer 2008)

Graduates of the Information and Records Management Program are prepared to
work as a records clerk, records manager, or records supervisor in an office setting. Records personnel account for and control an organization’s information records using various data storage, retrieval, and filing systems and are employed in virtually every industry in the nation. Employment is concentrated in health services, finance, insurance, real estate, transportation, communications, utilities, and business services. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

REQUIREMENTS (See Note 1)  TOTAL: 60 CREDITS

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<thead>
<tr>
<th>Code</th>
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<td>Practical Accounting Non-Major</td>
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<tr>
<td>BUSN 118</td>
<td>Intro to Business</td>
<td>3</td>
</tr>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
<td>2</td>
</tr>
<tr>
<td>CABS 119</td>
<td>Microsoft Word</td>
<td>3</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>3</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>3</td>
</tr>
<tr>
<td>CABS 205</td>
<td>Using Project Mgmt Software</td>
<td>2</td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>MGMT 203</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>OADM 105</td>
<td>Employability Skills</td>
<td>1</td>
</tr>
<tr>
<td>OADM 108</td>
<td>Input Technologies/Business</td>
<td>2</td>
</tr>
<tr>
<td>OADM 135</td>
<td>Human Relations in Work Place</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Information Records Mgmt I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Information Records Mgmt II</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
<td>3</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>2</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Diversity in Business</td>
<td>3</td>
</tr>
<tr>
<td>OADM 281</td>
<td>Office Systems Capstone</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Work Place</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
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</tbody>
</table>

LIMITED CHOICE REQUIREMENTS  TOTAL: 45 CREDITS

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

CHOICE 1: General Education Core Areas  4-5 Credits

(See General Education Core Requirements for information on how to fulfill those requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 2)  6
- Global Perspectives and Diversity Core Area (See Note 2)  6
- Mathematics Core Area (See Note 2)  6
- Sciences Core Area  4-5
- Writing Core Area (See Note 2)  0

MINIMUM TOTAL  54

NOTES:

1. It is recommended that students entering this curriculum have keyboarding
   and Windows experience. This experience may come from life or work experi-
   ence. CABS 100 Seminar, CABS 101, CABS 104, CABS 166, or CABS 195.

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

3. This curriculum requires that students complete all courses with a grade of 2.0
   or higher for graduation.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>CABS 103</td>
<td>ACCT 100</td>
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<td>CABS 119</td>
<td>BUSN 118</td>
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<td>CABS 126</td>
<td>MATH 117</td>
<td>OADM 240</td>
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<td>OADM 203</td>
<td>OADM 220</td>
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<td>OADM 195</td>
<td>OADM 216</td>
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<td>SPCH 110</td>
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<tr>
<td>OADM 215</td>
<td>WRIT 127</td>
<td>Lin.Ch.</td>
<td></td>
</tr>
</tbody>
</table>

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS IDENTIFIED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION (STUDENT) IS AN AID TO CONDUCTED BY THE Registrar’s Office that is retained when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

178 LANSING COMMUNITY COLLEGE CATALOG 2003-2005
### OFFICE ADMIN PROF STUDIES

#### CERTIFICATE OF COMPLETION

Curriculum Code: 1047 (Effective Fall 2003 - Summer 2008)

The Office Administration Professional Studies Certificate of Completion will provide currently working administrative professionals the opportunity to enhance their skills, increase their employability, and advance in their careers. Upon completion of this certificate, students will be able to apply new learning in their field of study to the workplace. Course work included in the certificate is grouped into categories established by the International Association of Administrative Professionals.

#### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

#### INFORMATION

Contact the Office Administration Program, Office Unit B, telephone number (517) 483-1587.

#### REQUIREMENTS (See Note 1)  

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
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<td>Input Technologies</td>
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</table>

#### LIMITED CHOICE REQUIREMENTS  

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

**CHOICE 1:** Information Processing/Communications Technologies  

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CIBS 100</td>
<td>Intro Computer Info Sys/MS</td>
<td>3</td>
</tr>
<tr>
<td>CIBS 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 161</td>
<td>American Sign Language I</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Commun in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Fundamental of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 140</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 260</td>
<td>Nonverbal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 280</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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</table>

**CHOICE 2:** Office Procedures/Administrative Mgmt/Records Mgmt  

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
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<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 231</td>
<td>Team Development</td>
<td>3</td>
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<tr>
<td>MGMT 236</td>
<td>Time and Stress Management</td>
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<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
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<td>OADM 105</td>
<td>Employability Skills</td>
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</tr>
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<td>OADM 195</td>
<td>Human Relations in Work Place</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Preprofessional Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Information Records Mgmt I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Information Records Mgmt II</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Admin Mgmt in Organizations</td>
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<td>OADM 275</td>
<td>Diversity in Business</td>
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</tr>
<tr>
<td>OADM 291</td>
<td>Office Systems Capstone</td>
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**CHOICE 3:** Software & Hardware Integration/Document Processing  

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>CABS 103</td>
<td>Internet Basics for Non-Majors</td>
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<td>CABS 104</td>
<td>Keyboarding Improvement</td>
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<tr>
<td>CABS 110</td>
<td>Intro to Microsoft Office</td>
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</tr>
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<td>CABS 119</td>
<td>Microsoft Word</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>
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<td>CABS 132</td>
<td>Microsoft Access Database</td>
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</tr>
<tr>
<td>CABS 182</td>
<td>Microsoft Powerpoint</td>
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<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
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<tr>
<td>CABS 205</td>
<td>Using Project Mgmt Software</td>
<td>2</td>
</tr>
<tr>
<td>CABS 210</td>
<td>Advanced Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CABS 219</td>
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<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>CABS 234</td>
<td>Programming Microsoft Access</td>
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</tbody>
</table>

**MINIMUM TOTAL:** 15

**NOTE:**

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 Seminars, CABS 101, or CABS 106.

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-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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</tr>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tr>
</tbody>
</table>
MUSIC
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0270 (Effective Fall 2003 - Summer 2008)

The Music Program enables students to transfer to a four-year institution after completing studies in music theory, piano, and applied lessons. In addition to academic music classes, the curriculum includes private training in an instrument, performance with fine ensembles, and introduction to computers and music. Emphasis is placed on integrating skills acquisition with performing opportunities.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

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) 483-1918 or the LCC Admissions Office, Suite 2300, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC PROGRAM
Curriculum Code: 0721

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

a. Submit high school transcript or GED and all college transcripts.

b. Interview with Performing Arts advisor to discuss curriculum requirements.

For the audition pertaining to their specific instrument, students are required to demonstrate skills in both performance and sight-reading.

This audition will be described in detail.

a. audition will consist of a live performance on instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

MUSIC PROGRAM REQUIREMENTS
Curriculum Code: 0270

TOTAL 35 CREDITS

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<tr>
<th>REQUIREMENTS</th>
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<tr>
<td>ENGL 122</td>
<td>Writing: Literature and Ideas</td>
</tr>
<tr>
<td>MUSC 138</td>
<td>Class Piano Major I</td>
</tr>
<tr>
<td>MUSC 139</td>
<td>Class Piano Major II</td>
</tr>
<tr>
<td>MUSC 163</td>
<td>Aural Skills I</td>
</tr>
<tr>
<td>MUSC 164</td>
<td>Aural Skills II</td>
</tr>
<tr>
<td>MUSC 193</td>
<td>Basic Musicianship I</td>
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<tr>
<td>MUSC 194</td>
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<td>MUSC 197</td>
<td>Intro to Music Technologies</td>
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<td>MUSC 240</td>
<td>World Music History</td>
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<td>MUSC 241</td>
<td>World Music History II</td>
</tr>
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<td>Aural Skills III</td>
</tr>
<tr>
<td>MUSC 264</td>
<td>Aural Skills IV</td>
</tr>
<tr>
<td>MUSC 293</td>
<td>Advanced Musicianship I</td>
</tr>
<tr>
<td>MUSC 294</td>
<td>Advanced Musicianship II</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS: (See Note 1) TOTAL: 22-25 CREDITS

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

CHOICE 1: General Education Core Areas 10-12 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area: 3
  - Global Perspectives and Diversity Core Area (See Note 2)
    - 0
  - Mathematics Core Area
    - 3-4
  - Science Core Area
    - 4-5
  - Writing Core Area (See Note 2)
    - 0

CHOICE 2: Private Lessons (See Note 3) 8 Credits

- MUSC 157 Applied Lesson I 2
- MUSC 158 Applied Lesson II 2
- MUSC 257 Applied Lesson III 2
- MUSC 258 Applied Lesson IV 2

CHOICE 3: Ensembles and Voice (Choose one subchoice) 4-5 Credits

Subchoice 3A: Voice Requirements

- MUSC 108 Concert Choir (See Note 3) 1
- MUSC 179 Beginning Diction for Singers (See Note 4) 2

Subchoice 3B: Instrumental Requirements (See Note 3)

- MUSC 119 Lansing Concert Band 1
- MUSC 121 Percussion Ensemble 1
- MUSC 122 Guitar Ensemble 1
- MUSC 123 Jazz Ensemble 1

MINIMUM TOTAL: 60

NOTES:
1. It is strongly recommended that students intending to transfer to four-year institutions meet additional course requirements as outlined in the MACRAO Transfer Agreement (see "Transfer Information"). Students should also consult appropriate Transfer Guides for specific four-year programs (available from Counseling and Advising).
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Course may be repeated and MUST be taken each semester student is enrolled as a major.
4. Course required only of Voice Majors, and must be taken in addition to the required vocal ensemble.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
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<td>Lim. Ch. 2</td>
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Students are responsible for completing all requirements as stated. The only official statement of program completion dates is an audit conducted by the Registrar's Office that is issued when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
MUSIC: COMMERCIAL ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0274 (Effective Fall 2003 - Summer 2008)

The Music: Commercial Program has been designed to focus on today's music in pop and jazz idioms. It is a first step toward a professional career in commercial music, such as studio engineer, band manager or performer. In addition to academic music classes, the curriculum includes private training in an 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing Section for skills assessment and advising information.

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 225, telephone number (517) 485-4181 or the LCC Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 493-1284.

REQUIREMENTS FOR ADMISSION TO THE MUSIC: COMMERCIAL PROGRAM

Curriculum Code: 0722

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

a. Submit high school transcript or GED and all college transcripts.

b. Interview with Performing Arts advisor to discuss curriculum requirements. Repeatability 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 thirty-minute cover list of written and oral theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

MUSIC: COMMERCIAL PROGRAM REQUIREMENTS

Curriculum Code: 0274

<table>
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<td>MUSC 135</td>
<td>Class Voice Commercial I</td>
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<td>Aural Skills I</td>
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<td>MUSC 164</td>
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<td>MUSC 193</td>
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<td>Basic Musicianship II</td>
<td>3</td>
<td></td>
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<tr>
<td>MUSC 197</td>
<td>Intro to Music Technologies</td>
<td>2</td>
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<tr>
<td>MUSC 235</td>
<td>Business of Music</td>
<td>3</td>
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<td>MUSC 254</td>
<td>Band Management</td>
<td>2</td>
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<td>MUSC 263</td>
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<td>MUSC 294</td>
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LIMITED CHOICE REQUIREMENTS (See Note 1) TOTAL: 41-48 CREDITS

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

CHOICE 1: General Education Core Areas 16-20 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

Communication Core Area 3

Global Perspectives and Diversity Core Area 3-4

Mathematics Core Area 3-4

Science Core Area 4-5

Writing Core Area 3-4

NOTES:

1. It is strongly recommended that students intending to transfer to four-year institutions meet additional course requirements as outlined in the MACRAO Transfer Agreement (see "Transfer Information"). Students should also consult appropriate Transfer Guides for specific four-year programs (available from Counseling and Advising).

2. Courses may be repeated and MUST be taken each semester student is enrolled as a major.

3. Other Media Technology (MTEC) courses may be substituted with department approval.

4. Students may choose from 120 level DANCO courses, and may need to meet other audition requirements.

SUGGESTED COURSE SEQUENCE

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

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<thead>
<tr>
<th>COURSE</th>
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<td>MUSC 163</td>
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<td>Lim. Ch. 1</td>
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<td>Lim. Ch. 1</td>
<td>Lim. Ch. 1</td>
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<td>MUSC 235</td>
<td>Lim. Ch. 1</td>
<td>Lim. Ch. 1</td>
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MINIMUM TOTAL 41-48 CREDITS

Students are responsible for consulting all requirements as stated. The official documentation of program completion status is an audit conducted by the Registrar's Office that is notified when students apply for a degree or certificate. Students are expected to apply six semesters prior to the semester they intend to graduate.
**MUSIC MANAGEMENT ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0861 (Effective Fall 2003 - Summer 2008)

The Music Management Program has been designed to focus on today's music industry. It is a first step toward a business career in the music industry; such as, studio engineer, band manager, or music retailing. In addition to academic music classes, the curriculum includes private training in an instrument, performance with fine ensembles, an introduction to computers and music, and business and management courses. Emphasis is placed on integrating musicianship and business skills. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

**PREREQUISITES**

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

**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 230, Clemon Vocational-Technical Center, telephone number (517) 483-1254.

**REQUIREMENTS FOR ADMISSION TO THE MUSIC MANAGEMENT PROGRAM**

Curriculum Code: 0861

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. 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 Selections Admissions will be forwarded to the Admissions Office for processing.

**MUSIC MANAGEMENT PROGRAM REQUIREMENTS**

Curriculum Code: 0861

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<td>ACCG 210</td>
<td>Principles of Accounting I</td>
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<td>ACCG 211</td>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
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<td>MATH 117</td>
<td>Math for Business</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
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<td>MTEC 129</td>
<td>Audio Production I</td>
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<td>MTEC 121</td>
<td>Audio Recording II</td>
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<td>MUSC 183</td>
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<td>MUSC 184</td>
<td>Aural Skills II</td>
<td>1</td>
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<td>MUSC 193</td>
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<td>MUSC 197</td>
<td>Intro to Music Technologies</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1: General Education Core Areas**

7-8 Credits

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

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<td>Communication Core Area</td>
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<td>Science Core Area</td>
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<tr>
<td>Writing Core Area (See Note 1)</td>
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**CHOICE 2: Private Lessons Commercial**

(See Note 2)

8 Credits

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<td>MUSC 258</td>
<td>Applied Lesson IV</td>
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**CHOICE 3: Ensembles and Voice (Choose one subchoice)**

4 Credits

**Subchoice 3A: Vocal Requirements (See Note 2)**

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<tr>
<th>Course Code</th>
<th>Title</th>
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<td>MUSC 101</td>
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<td>MUSC 122</td>
<td>Women's Choir</td>
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<td>MUSC 108</td>
<td>Concert Choir</td>
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**Subchoice 3B: Instrumental Requirements (See Note 2)**

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<td>Lansing Concert Band</td>
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<td>MUSC 121</td>
<td>Percussion Ensemble</td>
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<td>MUSC 122</td>
<td>Guitar Ensemble</td>
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<td>MUSC 123</td>
<td>Jazz Ensemble</td>
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**CHOICE 4: History**

4-6 Credits

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<td>World Music History I</td>
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<td>MUSC 242</td>
<td>American Musical Theater</td>
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<td>MUSC 246</td>
<td>History of Blues and Jazz</td>
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<tr>
<td>MUSC 247</td>
<td>History of Rock and Roll</td>
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</table>

**MINIMUM TOTAL**

69

**NOTES:**

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

2. Courses may be repeated and must be taken each semester student is enrolled as a major for the total indicated for this CHOICE.

**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 transfer credits from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
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</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
SACRED MUSIC
CERTIFICATE OF COMPLETION

Curriculum Code: 0833 (Effective Fall 2003 - Summer 2006)

The Certificate program in Sacred Music is designed for those interested in or already practicing music at their place of worship, and who wish to further develop their basic musical skills. Emphasis is on integrating fundamental knowledge of music theory and keyboard with stylistic and practical skills generally required of sacred musicians. Course work also includes private performance studies (typically in organ, piano, voice, or guitar).

This is a selective admissions program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 2300, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE SACRED MUSIC CERTIFICATE OF COMPLETION PROGRAM

Curriculum Code: 0721

In order to be considered as a candidate for the 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. Repertory requirements for the audition pertaining to their specific instrument will be discussed in detail.

c. Audition. The actual audition day will consist of a live performance on an instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>TOTAL: 10 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>MUSC 188</td>
<td>Class Piano Major I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 189</td>
<td>Class Piano Major II</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 163</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 164</td>
<td>Aural Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 193</td>
<td>Basic Musicianship I</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 194</td>
<td>Basic Musicianship II</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 197</td>
<td>Intro to Music Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 221</td>
<td>Sacred Music: History &amp; Styles</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 222</td>
<td>Techniques in Sacred Music</td>
<td>2</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS (See Note 1)

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

- MUSC 157 | Applied Lesson I              | 2
- MUSC 158 | Applied Lesson II             | 2

MINIMUM TOTAL

22

NOTE:

1. Typically, participants of Sacred Music will take Applied Lessons in Keyboard (Piano or Organ), Voice or Guitar, though other performance specializations are possible. Applied Lessons must be taken each semester a student is enrolled as a major. Courses may be repeated. OHE students may advance to MUSC 297 and MUSC 299 with Department Approval.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 138</td>
<td>MUSC 199</td>
</tr>
<tr>
<td>MUSC 183</td>
<td>MUSC 164</td>
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<td>MUSC 193</td>
<td>MUSC 184</td>
</tr>
<tr>
<td>MUSC 221</td>
<td>MUSC 197</td>
</tr>
<tr>
<td>MUSC 222</td>
<td>MUSC 222</td>
</tr>
</tbody>
</table>

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

### ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0278 (Effective Fall 2003 - Summer 2009)

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 improvisational, 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 469-1016.

### REQUIREMENTS (See Note 1)  TOTAL: 57 CREDITS

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<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tr>
<td>ARTS 102</td>
<td>Design &amp; Communication</td>
<td></td>
</tr>
<tr>
<td>DMNC 103</td>
<td>Beginning Jazz</td>
<td></td>
</tr>
<tr>
<td>MUSC 382</td>
<td>Voice I</td>
<td></td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td></td>
</tr>
<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td></td>
</tr>
<tr>
<td>THEA 114</td>
<td>Intro to Technical Theatre</td>
<td></td>
</tr>
<tr>
<td>THEA 120</td>
<td>Introduction to Acting</td>
<td></td>
</tr>
<tr>
<td>THEA 131</td>
<td>Studio Theatre Performance I</td>
<td></td>
</tr>
<tr>
<td>THEA 132</td>
<td>Studio Theatre Performance II</td>
<td></td>
</tr>
<tr>
<td>THEA 141</td>
<td>Acting I - Contemporary</td>
<td></td>
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<tr>
<td>THEA 143</td>
<td>Stage Voice for the Actor</td>
<td></td>
</tr>
<tr>
<td>THEA 171</td>
<td>Dramatic Form and Function I</td>
<td></td>
</tr>
<tr>
<td>THEA 173</td>
<td>Movement for the Actor</td>
<td></td>
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<tr>
<td>THEA 181</td>
<td>Improvisation</td>
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<tr>
<td>THEA 210</td>
<td>Theatre History</td>
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<tr>
<td>THEA 233</td>
<td>Studio Theatre Performance III</td>
<td></td>
</tr>
<tr>
<td>THEA 235</td>
<td>Studio Theatre Performance</td>
<td></td>
</tr>
<tr>
<td>THEA 240</td>
<td>Acting III - Classical</td>
<td></td>
</tr>
<tr>
<td>THEA 241</td>
<td>Acting III - Acting Styles</td>
<td></td>
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<tr>
<td>THEA 260</td>
<td>Dramatic Form and Function II</td>
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<tr>
<td>THEA 271</td>
<td>Dramatic Form and Function III</td>
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<tr>
<td>THEA 392</td>
<td>Audition Workshop</td>
<td></td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL: 57 CREDITS</strong></td>
<td></td>
</tr>
</tbody>
</table>

### LIMITED CHOICE REQUIREMENTS (See Note 2)  TOTAL: 7-8 CREDITS

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

### CHOICE 1:  General Education Core Area

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

| Communication Core Area (See Note 3) | 0 |
| Global Perspectives and Diversity Core Area (See Note 4) | 0 |
| Mathematics Core Area | 3-4 |
| Science Core Area (See Note 5) | 0 |
| Writing Core Area (See Note 5) | 0 |
| **TOTAL: 7-8 CREDITS** |   |

### CHOICE 2:  Global Perspectives and Diversity  4 Credits

| HUMS 190 | Mythology | 4 |
| HUMS 211 | History of Art I | 4 |
| HUMS 212 | History of Art II | 4 |
| HUMS 213 | World Civilizations I | 4 |
| HUMS 214 | World Civilizations II | 4 |
| MUSC 241 | World Music History I | 4 |

**MINIMUM TOTAL: 64**

### 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. It is strongly recommended that students intending to transfer to four-year institutions meet additional course requirements as outlined in the MACRAO Transfer Agreement (see "Transfer Information"). Students should also consult appropriate Transfer Guides for specific four-year programs (available from Counseling and Advising).

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

4. Students completing CHOICE 2 have fulfilled the requirements for this core area.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<td>ARTS 102</td>
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<td>THEA 131</td>
<td>THEA 173</td>
<td>THEA 240</td>
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<td>THEA 141</td>
<td>THEA 181</td>
<td>THEA 250</td>
<td>THEA 271</td>
</tr>
<tr>
<td>THEA 171</td>
<td>Lim. Ch. 1</td>
<td>Lim. Ch. 2</td>
<td>THEA 283</td>
</tr>
<tr>
<td>WRIT 121</td>
<td></td>
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</tbody>
</table>

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184 LANSING COMMUNITY COLLEGE CATALOG 2003–2005
PHOTOGRAPHIC IMAGING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0277 (Effective Fall 2003 - Summer 2006)

The field of photography is vast and diverse with a wide range of employment opportunities. Professionals include everyone from the traditional person with a camera, to a lab or service bureau employee, to someone working at a high-end computer station. Still requirements fall into two categories, visual and technical. Visual skills include idea development, composition, lighting, and communication. Technical skills include practical and theoretical knowledge of cameras and other photographic-related equipment, light sensitive materials, processes, and digital-based imaging equipment and software. A "photographer" may be self-employed, be a member of a small team, or be employed by a large company. 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 or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Visual Arts and Media Department, Academic and Office Facility, Room 208, telephone number (517) 485-1574.

REQUIREMENTS

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<td>ARTS 171</td>
<td>Computer Graphics/Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 228</td>
<td>Advanced Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 111</td>
<td>Intro to Photographic Tech I</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 112</td>
<td>Design for Imaging Tech</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 113</td>
<td>Lighting Concepts/Applications</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 114</td>
<td>Intro Photographic Color Tech</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 117</td>
<td>Intro to Photographic Tech II</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 119</td>
<td>Intermediate Lighting</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 210</td>
<td>Intermediate Color Ap and Tech</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 212</td>
<td>Large Format Photography</td>
<td>2</td>
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<tr>
<td>IMAG 213</td>
<td>Portrait Photography</td>
<td>2</td>
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<tr>
<td>IMAG 214</td>
<td>Photojournalism</td>
<td>2</td>
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<tr>
<td>IMAG 215</td>
<td>Photo Imaging Technology</td>
<td>2</td>
</tr>
<tr>
<td>IMAG 233</td>
<td>The Business of Photography</td>
<td>2</td>
</tr>
<tr>
<td>IMAG 234</td>
<td>Portfolio Assembly/Degree Comp (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 118</td>
<td>The Art of Geometry</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
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LIMITED CHOICE REQUIREMENTS

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<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 12-14 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CHOICE 1: General Education Core Areas</td>
<td>6-8 Credits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication Core Area (See Note 2)</td>
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<tr>
<td></td>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
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<tr>
<td></td>
<td>Mathematics Core Area (See Note 3)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Science Core Area (See Note 3)</td>
<td>0</td>
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<tr>
<td></td>
<td>Writing Core Area</td>
<td>3-4</td>
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<tr>
<td>CHOICE 2: Communication Core Area</td>
<td>3 Credits</td>
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</tr>
<tr>
<td>SPCH 112</td>
<td>Oral Communicate in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 122</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

PHOTOGRAPHY CERTIFICATE OF COMPLETION

Curriculum Code: 0963 (Effective Fall 2003 - Summer 2006)

This certificate program is designed to provide students with the necessary technical knowledge and skills needed to qualify for entry level photographic support positions. All of the course work may be applied toward the Photographic Imaging Technology Associate in Applied Science Degree.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>TOTAL: 27 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics/Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 111</td>
<td>Intro to Photographic Tech I</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 112</td>
<td>Design for Imaging Tech</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 113</td>
<td>Lighting Concepts/Applications</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 114</td>
<td>Intro Photographic Color Tech</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 119</td>
<td>Intermediate Lighting</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 210</td>
<td>Intermediate Color Ap and Tech</td>
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</tr>
</tbody>
</table>

MINIMUM TOTAL

27

NOTES:
1. Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is routinely mailed to current students upon completion of the program.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IMAG 111</td>
<td>MAG 114</td>
<td>ARTS 171</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

27

NOTES:
1. Students are required to purchase additional supplies, materials, and/or equipment not covered by course fees.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 27 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMAG 111</td>
<td>IMAG 114</td>
<td>ARTS 171</td>
</tr>
<tr>
<td>IMAG 112</td>
<td>IMAG 117</td>
<td>IMAG 215</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

27
REAL ESTATE
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0130 (Effective Fall 2003 - Summer 2008)

Real estate agents rent, buy, and sell property for clients on a commission basis. Agents may study property listings to learn what is for sale; keep informed of property values, market conditions and mortgage options; find prospects and develop leads; and refer clients to solicitors. Students who complete the curriculum may be promoted to more advanced positions, such as those in real estate sales, property management, or mortgage brokerage.

PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisites. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

Contact the Business Department, Old Central Building, Room 210, telephone number (317) 485-1522.

REQUIREMENTS

CODE         TITLE                              TOTAL: 96 CREDITS
MGMT 234       Diversity in the Workplace                      3
MGKTG 119     -Mgt/Manage Your Prop/Img                           3
MGKTG 120     Sales                                               3
MGKTG 200     Principles of Marketing                            3
REAL 273       Real Estate Investment                             3
REAL 274       Real Estate License Exam                              3
REAL 275       Real Estate Financing                                3
REAL 277       Property Management                                 3
REAL 279       Residential Appraisal                                3
REAL 280       Real Estate Law                                    3
SPCH 110      Oral Communication in the Workplace                 3
WRIT 127      Business Writing                                    3

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

7-8 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

Communication Core Area (See Note 1)          0
Global Perspectives and Diversity Core Area (See Note 1)          0
Mathematics Core Area                          2-4
Science Core Area                              4-5
Writing Core Area (See Note 1)                0

CHOICE 2: Accounting

3-4 Credits
ACCG 100     Practical Accounting Non-Major                     3
ACCG 101     Accounting Info for Management                     3
ACCG 210     Principles of Accounting                             4

CHOICE 3: Real Estate Related (See Note 2)

10 Credits
ARCH 100     Intro to Architecture Drawing                      3
BLDT 108     Intro to Construction                                3
BUSN 119     Intro to Business                                   3
BUSN 295     Small Business Management                            3
CIVL 120     Surveying                                         4
ECON 201     Principles of Economics-Macro                      3
ECON 202     Principles of Economics-Macro                      3
LEG 217     Busn Law III, Busn Organiza                          3
LEG 221     Real Estate Transaction                             3
MGMT 225     Principles of Management                             3
MGMT 226     Organizational Behavior                             3
MGMT 239     Time and Stress Management                          3
MGKTG 140     Introduction to Advertising                       3
MGKTG 210     Marketing on the Internet                          3
MGKTG 229     Public Relations                                 2
REAL 271     Introduction to Real Estate                          2

REAL ESTATE
CERTIFICATE OF COMPLETION

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

REQUIREMENTS

TOTAL: 16 CREDITS
CODE         TITLE            CREDIT HOURS
MGKTG 120     Sales                          3
REAL 273     Real Estate Investment           3
REAL 275     Real Estate Financing            3
REAL 279     Real Estate License Exam         3
REAL 280     Real Estate Law                  3

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Real Estate Basics

5-6 Credits
MGKTG 119     Mgt/Manage Your Prop/Img                           3
REAL 271     Introduction to Real Estate               2
REAL 277     Property Management                        3

MINIMUM TOTAL                                          20

SUGGESTED COURSE SEQUENCE

SUGGESTED COURSE SEQUENCE

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students should confer with a Business Department program advisor to assure that the selection of Limited Choice courses will best fit their career plans.
3. Choose CADS-related courses of 110 or above.

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

MINIMUM TOTAL                                          50

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initiated when students apply for a degree/credential. Students are expected to apply one semester prior to the semester they intend to graduate.
CHEMICAL PROCESS TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0859 (Effective Fall 2003 - Summer 2008)

Chemical Process Technologists are trained for employment as process operators in the chemical and related industries. Process operators are required to maintain safety, health and environmental standards in the plant; handle, store and transport chemicals; operate, monitor and control continuous and batch processes; and participate in routine and preventative maintenance of equipment and instrumenta-
tion. 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 Course Descriptions or Course Offerings for course prereq-
usite information. See the Assessment and Placement Testing section for skills
assessment and advising information.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, tele-
phone number (517) 483-1092.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 152</td>
<td>General Chemistry Lecture II</td>
<td>4</td>
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<tr>
<td>CHEM 156</td>
<td>General Chemistry Lab I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 159</td>
<td>General Chemistry Lab II</td>
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</tr>
<tr>
<td>CHEM 182</td>
<td>Introductory Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 192</td>
<td>Intro Organic Chemistry Lab</td>
<td>1</td>
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<tr>
<td>CHEM 211</td>
<td>Chemical Process Technology I</td>
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<tr>
<td>CHEM 222</td>
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<tr>
<td>CPSC 126</td>
<td>Introduction to Computer</td>
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</tr>
<tr>
<td>ENVR 131</td>
<td>Industrial Process Safety</td>
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<tr>
<td>FIRE 220</td>
<td>Hazardous Materials/Fire Sup</td>
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<tr>
<td>MATH 121</td>
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<td>4</td>
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<td>SOCL 120</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>STAT 170</td>
<td>Introduction to Statistics</td>
<td>3</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<th>COURSE</th>
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<tr>
<td>CHEM 151</td>
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<tr>
<td>CHEM 152</td>
<td>General Chemistry Lecture II</td>
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<td>CHEM 156</td>
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<td>CHEM 159</td>
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<td>CHEM 182</td>
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<td>CHEM 192</td>
<td>Intro Organic Chemistry Lab</td>
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<tr>
<td>CHEM 211</td>
<td>Chemical Process Technology I</td>
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<td>CHEM 222</td>
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<td>CPSC 126</td>
<td>Introduction to Computer</td>
<td>3</td>
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<tr>
<td>ENVR 131</td>
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</tr>
<tr>
<td>FIRE 220</td>
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<tr>
<td>MATH 121</td>
<td>College Algebra I</td>
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<tr>
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</tr>
<tr>
<td>STAT 170</td>
<td>Introduction to Statistics</td>
<td>3</td>
</tr>
</tbody>
</table>

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

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

2. WRIT 121 is recommended for students planning to transfer.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>SEMESTER 1</th>
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<td>CPSC 126</td>
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</tr>
<tr>
<td>Lim. Ch. 2</td>
<td>SPCH 110</td>
<td>Lim. Ch. 4</td>
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</table>

REQUIRED TOTAL CREDITS: 43 CREDITS

LIMITED CHOICE TOTAL CREDITS: 18-21 CREDITS

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

CHOICE 1: General Education Core Areas

- Communication Core Area (See Note 1) 0 Credits
- Global Perspectives and Diversity Core Area (See Note 1) 0 Credits
- Mathematics Core Area (See Note 1) 0 Credits
- Science Core Area (See Note 1) 0 Credits
- Writing Core Area (See Note 2) 0 Credits

CHOICE 2: Writing (See Note 3)

WRIT 121 Composition I 4 Credits
WRIT 124 Technical Writing 3 Credits

CHOICE 3: Physics

PHYS 200 Applied Physics 4 Credits
PHYS 221 Introductory Physics I 4 Credits

CHOICE 4: ELECTIVES

ENVR 121 Environmental Rules and Regs 3 Credits
ENVR 122 Enviro Simal & Instrumentation 4 Credits
ELTE 100 Electrical Safety Practices 1 Credit
ELTE 110 Practical Electricity 9 Credits
MACH 135 Metallurgy and Heat Treat 4 Credits
MFGM 101 Industrial Hydraulics 4 Credits
MFGM 102 Industrial Pneumatics 3 Credits
SCIN 267 Science Technology Internship 4 Credits

MINIMUM TOTAL: 61 CREDITS

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

LANSING COMMUNITY COLLEGE CATALOG 2003-2005 187
## CHEMICAL PROCESS TECHNOLOGY
### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0962 (Effective Fall 2003 - Summer 2008)

This program will qualify students for immediate employment in the chemical or chemical-related industries as chemical process technicians. In this capacity, employees are involved in the direct manufacture of products - monitoring, calibrating and maintaining equipment used in the production process. Additionally, they would practice quality assurance standards, environmental regulations, and safety procedures. Students may also elect to apply their certificate credits toward a two-year associates degree in this area.

### PREREQUISITES

Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408; telephone number (517) 483-1092.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TOTAL</th>
<th>CREDIT (HOURS)</th>
<th>DESCRIPTION</th>
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<tbody>
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<td>CHEM 115</td>
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<td>General Chemistry Lecture (I)</td>
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<td>CHEM 116</td>
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<td>General Chemistry Lab (I)</td>
</tr>
<tr>
<td>CHEM 118</td>
<td></td>
<td>3</td>
<td>Introductory Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 119</td>
<td></td>
<td>1</td>
<td>Intro Organic Chemistry Lab</td>
</tr>
<tr>
<td>CPJC 120</td>
<td></td>
<td>3</td>
<td>Introduction to Computers</td>
</tr>
<tr>
<td>SPCH 110</td>
<td></td>
<td>5</td>
<td>Oral Communic in the Workplace</td>
</tr>
<tr>
<td>WRIT 124</td>
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<td>3</td>
<td>Technical Writing</td>
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</table>

### LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:** Mathematics (Choose one subchoice) 7-8 Credits

**Subchoice 1A**
- MATH 112: Intermediate Algebra 4
- QUAL 103: Probability/Stat Qual Assur 4

**Subchoice 1B**
- MATH 121: College Algebra I 4
- STAT 170: Introduction to Statistics 3

**CHOICE 2:** Electives

**Total:** 6 Credits

- CHEM 211: Chemical Process Technology I 4
- PHYS 200: Applied Physics 4
- QUAL 100: Intro Quality Assurance 4

### MINIMUM TOTAL

33

### NOTE:

1. A minimum grade of 2.0 is required in MATH 112, PHYS 200, CHEM 115, and CHEM 116.

### SUGGESTED COURSE SEQUENCE

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

1. CHEM 115
2. CHEM 116
3. CPJC 120
4. SPCH 110
5. Lim. Ch. 1
6. Lim. Ch. 2
7. WRIT 124
8. Lim. Ch. 1
9. Lim. Ch. 2
CHEMICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0163 (Effective Fall 2003 - Summer 2008)

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 Course Descriptions or Course Offerings for course prereq-

uities information. See the Assessment and Placement Testing section for skills

assessment and advising information.

INFORMATION
Contact the Science Department, Arts, and Sciences Building, Room 408, Tele-

one number (517) 483-1092.

REQUIREMENTS

TOTAL: 42 CREDITS

<table>
<thead>
<tr>
<th>COURSE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
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<td>CHEM 152</td>
<td>General Chemistry Lecture II</td>
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<td>CHEM 161</td>
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<td>CHEM 162</td>
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<td>CHEM 211</td>
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<tr>
<td>CHEM 251</td>
<td>Organic Chemistry Lecture I</td>
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<tr>
<td>CHEM 252</td>
<td>Organic Chemistry Lecture II</td>
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<tr>
<td>CHEM 252</td>
<td>Organic Chemistry Laboratory</td>
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<tr>
<td>CHEM 272</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 221</td>
<td>Introductory Physics I</td>
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<tr>
<td>PHYS 221</td>
<td>Introductory Physics II</td>
<td>4</td>
</tr>
<tr>
<td>STAT 121</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>STAT 121</td>
<td>Introduction to Statistics</td>
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</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 22-27 CREDITS

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

CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, when appropriate, are available for each core area.)

Communication Core Area (See Note 1) 0
Global Perspectives and Diversity Core Area (See Note 1) 0
Mathematics Core Area (See Note 2) 0
Science Core Area (See Note 1) 0
Writing Core Area (See Note 3) 0

CHOICE 2: Mathematics (Choose one subchoice)

Subchoice 2A:

MATH 121 College Algebra I 4
MATH 122 College Algebra II and Trig 3

Subchoice 2B:

MATH 128 College Algebra and Trig 5

CHOICE 3: Writing (See Note 4)

WRIT 121 Composition I 4
WRIT 124 Technical Writing 3

NOTE:
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students completing CHOICE 2 have fulfilled the requirements for this Core area.
3. Students completing CHOICE 3 have fulfilled the requirements for this Core area.
4. WRIT 121 is recommended for students planning to transfer.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>CHEM 151</td>
<td>CHEM 152</td>
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<td>CHEM 161</td>
<td>CHEM 162</td>
<td>CHEM 262</td>
<td>CHEM 262</td>
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<td>CPSC 120</td>
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<td>PHYS 221</td>
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<td>STAT 120</td>
<td>SOCIL 120</td>
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<tr>
<td>Lim, Ch. 3</td>
<td>Lim, Ch. 4</td>
<td>Lim, Ch. 4</td>
<td>Lim, Ch. 4</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0793 (Effective Fall 2003 - Summer 2008)

Environmental Technicians may work for environmental/engineering consulting firms, local or state regulatory agencies, manufacturers, recycling and waste management companies and local utility and public service (water) departments. They perform tasks such as environmental sample collection and monitoring, instrument calibration, report writing and data management. Environmental Technicians may help clients comply with governmental environmental standards, assist in field investigations, work as a team member on a waste or contamination site. They use computer skills to work with environmental data as well as the concepts of chemistry, biology, meteorology, geology and hydrology to help professionals determine the movement and effects of environmental contaminants. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course pre-requisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1082.

REQUIREMENTS

| TOTAL: 48 CREDITS |
|-------------------|----------------|
| CODE | TITLE | CREDIT HOURS |
| BIDL 210 | Natural Resource Conservation | 4 |
| CHEM 151 | General Chemistry Lecture I | 4 |
| CHEM 152 | General Chemistry I | 3 |
| CHEM 161 | General Chemistry Lecture II | 1 |
| CHEM 162 | General Chemistry II | 1 |
| CPSC 120 | Introduction to Computers | 3 |
| ENVIR 121 | Environmental Rules and Regs | 3 |
| ENVIR 122 | Enviro Smp & Instrumentation | 4 |
| ENVIR 131 | Industrial Process Safety | 3 |
| FIRE 220 | Hazardous Materials/Fire Ser | 4 |
| GEOL 220 | Environmental Geology | 4 |
| MATH 121 | College Algebra | 4 |
| SOC 120 | Introduction to Sociology | 4 |
| SPCH 120 | Dynamics of Communication | 3 |
| WRIT 121 | Composition I | 4 |

LIMITED CHOICE REQUIREMENTS (See Note 1)

<table>
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<th>TOTAL: 14-17 CREDITS</th>
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<td>BIDL 210</td>
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<td>CHEM 151</td>
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<td>CHEM 161</td>
</tr>
<tr>
<td>MATH 121</td>
</tr>
<tr>
<td>WRIT 121</td>
</tr>
</tbody>
</table>

CHOOSE 2: Environmentally Related Courses 14-17 Credits

| CODE | TITLE | CREDIT HOURS |
| BIDL 128 | Organismal Biology | 4 |
| BIDL 303 | Microbiology | 3 |
| BIDL 254 | Microbiology Laboratory | 1 |
| CHEM 182 | Introductory Organic Chemistry | 3 |
| CHEM 192 | Intro Organic Chemistry Lab | 1 |
| GRET 203 | Beginning MicroStation | 3 |
| GRET 220 | Hydrological Systems | 3 |
| GRET 255 | Beginning Arc/Info | 3 |
| POLS 120 | American Political System | 4 |
| SCIN 267 | Science Technology Internship | 4 |
| STAT 170 | Introduction to Statistics | 3 |

MINIMUM TOTAL 63

NOTES:
1. It is strongly recommended that students intending to transfer to four-year institutions meet additional course requirements as outlined in the MACRAO Transfer Agreement (see "Transfer Information"). Students should also consult appropriate Transfer Guides for specific four-year programs (available from Counseling and Advising).
2. Students completing REQUIREMENTS have fulfilled the requirements for those 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 to courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<td>BIDL 210</td>
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<td>CHEM 162</td>
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<tr>
<td>WRIT 121</td>
<td>Lim. Ch. 2</td>
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</table>

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

190 - LANSING COMMUNITY COLLEGE CATALOG 2003-2005
HISTOCLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0923 (Effective Fall 2003 - Summer 2006)

Histotechnicians work under the supervision of a pathologist to prepare tissue specimens for diagnosis. They perform gross tissue preparation and laboratory procedures to show microscopic structure. Histotechnicians solve problems, demonstrate ethics and patient confidentiality, and use chemical safety and universal precautions. Histotechnicians work together with laboratory personnel to provide doctors with information for making a diagnosis. To work in most laboratory facilities, Histotechnicians must be certified by the American Society of Clinical Pathologists (ASCP), 2100 W. Harrison Street, Chicago, Illinois, 60612-3798. This curriculum is intended for students who have been admitted to the Joint LCC-Capital Area Career Center Histotechnology Program. Curriculum is approved by the National Accrediting Agency for Clinical Laboratory Services (NAACLS), 410 W. Bryn Mawr Avenue, Suite 670, Chicago, Illinois, 60657-5834. 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 Histotechnology Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 468, telephone number (517) 483-1092 or The Capital Area Career Center at (517) 244-1303.

REQUIREMENTS FOR ADMISSION TO THE HISTOCLOGIC TECHNOLOGY PROGRAM
For current information about admission requirements, students must contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or the LCC Admissions Office, Suite 5300, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
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<tr>
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<tr>
<td>BIOL 201</td>
<td>Human Anatomy</td>
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<tr>
<td>BIOL 270</td>
<td>Human Genetics</td>
<td>3</td>
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<tr>
<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
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<tr>
<td>CHEM 152</td>
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</tr>
<tr>
<td>CPSC 120</td>
<td>Introduction to Computers</td>
<td>3</td>
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<tr>
<td>MATH 112</td>
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<tr>
<td>SCIS 297</td>
<td>Independent Study in Science</td>
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<tr>
<td>SOCL 120</td>
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</tr>
<tr>
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<td>Dynamics of Communication</td>
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<td>WRT 121</td>
<td>CPSC 120</td>
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</table>

Completion of the accredited Capital Area Career Center Histotechnology Program Certification by the ASCP (see Note 1)

16 Credits

LIMITED CHOICE REQUIREMENTS

TOTAL: 11 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 2) 6 Credits

- Communication Core Area
- Global Perspectives and Diversity Core Area
- Mathematics Core Area
- Science Core Area
- Writing Core Area

CHOICE 2: Electives 11 Credits

- BIOL 163 Microbiology
- BIOL 354 Microbiology Laboratory
- BIOL 275 Molecular Biology I
- BIOL 276 Molecular Biology II
- MATH 121 College Algebra I
- SCIN 287 Science Technology Internship
- STAT 100 Introduction to Statistics
- WRT 122 Composition II

MINIMUM TOTAL 52

NOTES:
1. The specific histologic technique courses necessary to prepare for this certification must be taken at the Capital Area Career Center or, students who have prepared for the certification exam in another program may apply for "Credit For Previously Acquired Knowledge and Learning Experience." See the "Student Records" section of the catalog
2. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

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

LANSING COMMUNITY COLLEGE CATALOG 2003–2005
HISTOLOGIC TECHNICIAN
CERTIFICATE OF COMPLETION

Curriculum Code: 0965 (Effective Fall 2003 - Summer 2006)

Histologic Technicians work under the supervision of a pathologist to prepare tissue specimens for diagnosis. They perform gross tissue preparation and laboratory procedures to allow microscopic structure. Histologic Technicians solve problems, demonstrate ethics and patient confidentiality, and use chemical safety and universal precautions. Histologic Technicians work together with laboratory personnel to provide access with information for making a diagnosis. To work in most laboratory facilities, Histologic Technicians must be certified by the American Society of Clinical Pathologists (ASCP), 2100 W. Harrison Street, Chicago, Illinois, 60612-3786. This curriculum is intended for students who have been admitted to the joint LCC/Ingham Intermediate Histologic Technician Certificate Program. Students receive a certificate upon completion and are eligible to take the HT Board of Registry Exam. The certificate program leads into the Associate in Applied Science Degree in Histologic Technology which students are strongly encouraged to complete for more employment options. Curriculum is approved by the National Accrediting Agency for Clinical Laboratory Services (NAACLS), 410 W. Bryn Mawr Avenue, Suite 670, Chicago, Illinois, 60657-5534.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the College. Many of the courses for this program are open only to students officially admitted to the Histologic Technician Certificate Program.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or The Capital Area Career Center at (517) 244-1393.

REQUIREMENTS FOR ADMISSION TO THE HISTOLOGIC TECHNOLOGY PROGRAM
For current information about admission requirements, students must contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or the LCC Admissions Office, Room 2300, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>SCIN 287</td>
<td>Science Technology Internship</td>
<td>4</td>
</tr>
<tr>
<td>SCIS 236</td>
<td>Directed Histotech Studies (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>SCIS 297</td>
<td>Independent Study in Science</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 24 CREDITS

NOTES:
1. Students must enroll in SCIS 296 four times for a total of 16 credits. For High School students enrolled in the joint LCC/Capital Area Career Center Histologic Technician Certificate Program, the SCIS 296 credits will be articulated.

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

<table>
<thead>
<tr>
<th></th>
<th>I</th>
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<th>IV</th>
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<tbody>
<tr>
<td>SCIS 236</td>
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<td>SCIS 296</td>
<td>SCIS 296</td>
<td>SCIS 297</td>
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<table>
<thead>
<tr>
<th></th>
<th>V</th>
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<tbody>
<tr>
<td>SCIN 287</td>
<td></td>
</tr>
</tbody>
</table>
MOLecular Biotechnology
ASSoCiATE In APPLIED SCIENCE DEGREE

Curriculum Code: 0212 (Effective Fall 2003 - Summer 2006)

The Biotechnology program is a laboratory-intensive curriculum which emphasizes the wide-ranging applications of recombinant DNA technology (gene engineering) including the preparation of gene libraries, Polymerase Chain Reaction, and DNA "fingerprinting." Graduates of this program will be able to work in many exciting areas of biotechnology, such as human genetic disease research, improvement of disease-resistance in plants, enhanced crop production, pharmacological research, biological cleanup of environmental pollution, or genome sequencing projects. Near the end of the program the Science Department will make every effort to arrange for internships in university or industrial research laboratories for students who wish to gain further experience. If you plan to transfer to a four-year school, please see an academic advisor or counselor before enrolling. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor before enrolling in any course.

PRERequisites
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>CODE</td>
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<tr>
<td>BIOL 127</td>
<td>Cell Biology</td>
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<tr>
<td>BIOL 273</td>
<td>Molecular Biology I (See Note 1)</td>
</tr>
<tr>
<td>BIOL 275</td>
<td>Molecular Biology II</td>
</tr>
<tr>
<td>CHEM 151</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 152</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 161</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 162</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 251</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 252</td>
<td>Organic Chemistry II</td>
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<tr>
<td>CHEM 272</td>
<td>Organic Chemistry Laboratory</td>
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<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
<tr>
<td>WRT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

Complete the indicated number of credits from each core area.

- Communication Core Area (See Note 2) 0
- Global Perspectives and Diversity Core Area (See Note 2) 0
- Mathematics Core Area (See Note 3) 0
- Science Core Area (See Note 2) 0
- Writing Core Area (See Note 2) 0

CHOICE 2: Mathematics

- MATH 121 College Algebra I 4
- MATH 126 College Algebra and Trig 5

MINIMUM TOTAL

61

NOTES:
1. Students are strongly urged to complete BIOL 127 and CHEM 161 before enrolling in BIOL 275.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students completing CHOICE 2 have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 127</td>
<td>CHEM 152</td>
<td>BIOL 275</td>
<td>BIOL 276</td>
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<tr>
<td>CHEM 161</td>
<td>WHRT 121</td>
<td>CHEM 251</td>
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<td>CHEM 161</td>
<td>WHRT 121</td>
<td>Lim. Ch. 3</td>
<td>CHEM 272</td>
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<td>SPCH 120</td>
<td>Lim. Ch. 3</td>
<td>Lim. Ch. 3</td>
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<tr>
<td>Lim. Ch. 3</td>
<td>Lim. Ch. 3</td>
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</tbody>
</table>
VETERINARY TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0287 (Effective Fall 2003 - Summer 2008)

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, laboratory specimen analysis, physical therapy, surgical assistance, anesthesia, dental hygiene, X-ray imaging, nutritional management, and client education. The variety in veterinary technology makes it a challenging medical career for those who enjoy working with animals and people. Career opportunities exist with veterinary hospitals, biomedical research institutions, zoological parks, and other animal care facilities.

Students interested in this curriculum must apply to the joint LCC/MSU Veterinary Technology Program. Students accepted to the Veterinary Technology Associate Degree Program at LCC must also apply to the Veterinary Technology Program in the Spring. Admission is competitive. Successful applicants would start attending classes at the MSU Veterinary School the following January. Students are advised to have a strong background in biology, chemistry, algebra and computer science. Students are encouraged to actively seek experience in the veterinary clinical setting. This experience will help students form the foundation for career development, prior to enrolling in a college curriculum. 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 20 CREDITS</th>
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<tbody>
<tr>
<td>CODE</td>
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</tr>
<tr>
<td>BIO 127</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>CHEM 151</td>
<td>General Chemistry Lecture</td>
</tr>
<tr>
<td>CHEM 161</td>
<td>General Chemistry Lab I</td>
</tr>
<tr>
<td>SOC1 120</td>
<td>Introduction to Socioculture</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 44-45 CREDITS</th>
</tr>
</thead>
</table>

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

CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 1) 0
- Global Perspectives and Diversity Core Area (See Note 2) 0
- Mathematics Core Area (See Note 2) 0
- Science Core Area (See Note 1) 0
- Writing Core Area (See Note 1) 0

CHOICE 2: Mathematics

- MATH 121 College Algebra I 4
- MATH 126 College Algebra and Trig 5

CHOICE 3: MSU Veterinary Medicine Courses (See Note 3) Required Veterinary Medicine courses taken at Michigan State University

- 40 Credits

MINIMUM TOTAL 54

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
2. Students completing CHOICE 2 have fulfilled the requirements for this core area.
3. Specific Veterinary Medicine courses are necessary to fulfill this requirement. These courses must be taken at Michigan State University.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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</thead>
<tbody>
<tr>
<td>CHEM 151</td>
<td>BIOL 127</td>
</tr>
<tr>
<td>CHEM 161</td>
<td>SOCL 120</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>WRIT 121</td>
</tr>
<tr>
<td>Link, Ch. 2</td>
<td></td>
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</tbody>
</table>

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

Curriculum Code: 0392 (Effective Fall 2003 - Summer 2006)

The Sign Language Interpreter is a person specially trained to facilitate communication between the deaf, hard of hearing, and hearing communities. Employment opportunities may be in educational settings, institutions, 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Communication Department, Arts and Sciences Building, Room 211, telephone number (517) 483-1040.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>SIGN 160</td>
<td>Orientation to Deafness</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 161</td>
<td>American Sign Language I</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 162</td>
<td>American Sign Language II</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 163</td>
<td>American Sign Language III</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 168</td>
<td>Fingerspelling</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 167</td>
<td>Beginning Sign to Voice</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 168</td>
<td>Expressive Manual Commun</td>
<td>2</td>
</tr>
<tr>
<td>SIGN 169</td>
<td>Receptive Communication</td>
<td>2</td>
</tr>
<tr>
<td>SIGN 176</td>
<td>Interpreting/Transliterating</td>
<td>2</td>
</tr>
<tr>
<td>SIGN 240</td>
<td>Deaf Culture and History</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 260</td>
<td>Linguistic Principles of ASL</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 261</td>
<td>Principles of Interpreting (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 262</td>
<td>Mod Quality Assurance (OA)</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 263</td>
<td>Intermediate Sign to Voice</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 264</td>
<td>Advanced Sign to Voice</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 265</td>
<td>Interpretive/Transliter</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 266</td>
<td>Sign Internship I</td>
<td>3</td>
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<tr>
<td>SIGN 268</td>
<td>Sign Internship II</td>
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<tr>
<td>SIGN 295</td>
<td>Indep. Study in Sign Language</td>
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LIMITED CHOICE REQUIREMENTS

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<tbody>
<tr>
<td>Complete the indicated number of credits from each CHOICE listed below.</td>
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</table>

CHOICE 1: General Education Core Areas 13-17 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 2) 6
- Global Perspectives and Diversity Core Area 3-4
- Mathematics Core Area 3-4
- Science Core Area 4-5
- Writing Core Area 3-4

MINIMUM TOTAL 67

NOTES:
1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167 and prior to registering for SIGN 261.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core Area.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>SIGN 160</th>
<th>SIGN 161</th>
<th>SIGN 162</th>
<th>SIGN 163</th>
<th>SIGN 240</th>
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<tbody>
<tr>
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<td>SIGN 165</td>
<td>SIGN 166</td>
<td>SIGN 167</td>
<td>SIGN 260</td>
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<td>SIGN 251</td>
<td>SIGN 252</td>
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</tr>
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</table>

SIGN LANGUAGE INTERPRETER CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0167 (Effective Fall 2003 - Summer 2006)

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 in the State of Michigan.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>SIGN 160</td>
<td>Orientation to Deafness</td>
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<td>SIGN 161</td>
<td>American Sign Language I</td>
<td>3</td>
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<tr>
<td>SIGN 162</td>
<td>American Sign Language II</td>
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<tr>
<td>SIGN 163</td>
<td>American Sign Language III</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 168</td>
<td>Fingerspelling</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 261</td>
<td>Principles of Interpreting (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 262</td>
<td>Mod Quality Assurance (OA)</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 263</td>
<td>Intermediate Sign to Voice</td>
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<tr>
<td>SIGN 264</td>
<td>Advanced Sign to Voice</td>
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<tr>
<td>SIGN 265</td>
<td>Interpretive/Transliter</td>
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</tr>
<tr>
<td>SIGN 266</td>
<td>Sign Internship I</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 268</td>
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LIMITED CHOICE REQUIREMENTS

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<th>TOTAL: 2-3 CREDITS</th>
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<tbody>
<tr>
<td>Complete the indicated number of credits from each CHOICE listed below.</td>
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</tbody>
</table>

CHOICE 1: Related Professional Courses 2-3 Credits

- SIGN 164 | American Sign Language IV | 3 |
- SIGN 166 | Receptive Manual Commun | 2 |
- SIGN 167 | Advanced Fingerspelling | 2 |
- SIGN 250 | Deaf Culture and History | 3 |
- SIGN 265 | Linguistic Principles of ASL | 3 |
- SIGN 266 | Advanced Sign to Voice | 3 |
- SIGN 294 | Sign Language Interpreting Seminar | 2 |

MINIMUM TOTAL 37

NOTE:
1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167 and prior to registering for SIGN 261.

SUGGESTED COURSE SEQUENCE

<table>
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<tr>
<th>SIGN 160</th>
<th>SIGN 161</th>
<th>SIGN 162</th>
<th>SIGN 163</th>
<th>SIGN 240</th>
</tr>
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<td>SIGN 165</td>
<td>SIGN 166</td>
<td>SIGN 167</td>
<td>SIGN 260</td>
</tr>
<tr>
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<td>SIGN 251</td>
<td>SIGN 252</td>
<td>SIGN 253</td>
<td>SIGN 254</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0852 (Effective Fall 2003 - Summer 2008)

The Stage Technology Program provides training in technical skills associated with the stage technology industry, as well as general education classes that are part of most liberal studies degrees. Students who eventually plan to study scenic design or lighting design, media technology or communication, including television and film studies, electrical or medical engineering, or other related fields may find the unique blend of theory and practice in the Stage Technology Program particularly helpful. Upon completion of this degree, students may choose to enter the stage technology field or with appropriate course planning, a student may transfer to a four-year institution. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018.

REQUIREMENTS

<table>
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<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
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<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SRLC 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>STEC 100</td>
<td>Intro to Stage Tech Industry</td>
<td>2</td>
</tr>
<tr>
<td>STEC 120</td>
<td>Stage Lighting and Electricity</td>
<td>3</td>
</tr>
<tr>
<td>STEC 122</td>
<td>Advanced Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>STEC 123</td>
<td>Audio/Visual Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEC 140</td>
<td>Theatrical Make-Up/wardrobe</td>
<td>3</td>
</tr>
<tr>
<td>STEC 150</td>
<td>Stage and Arena Rigging</td>
<td>3</td>
</tr>
<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA 114</td>
<td>Intro to Technical Theater</td>
<td>3</td>
</tr>
<tr>
<td>THEA 210</td>
<td>Theatre History</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS (See Note 1)  TOTAL: 15-16 CREDITS

Complete the indicated number of credits from **limited choice** listed below.

**CHOICE 1:** General Education Core Areas  3-4 Credits
(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area (See Note 2)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 3)</td>
<td>0</td>
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<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area (See Note 2)</td>
<td>0</td>
</tr>
<tr>
<td>Writing Core Area (See Note 2)</td>
<td>0</td>
</tr>
</tbody>
</table>

**CHOICE 2:** Global Perspectives and Diversity  4 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 213</td>
<td>World Civilizations I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 214</td>
<td>World Civilizations II</td>
<td>4</td>
</tr>
</tbody>
</table>

**CHOICE 3:** Stage Technology (See Note 4)  8 Credits

**MINIMUM TOTAL**  46 CREDITS

**NOTES:**
1. It is strongly recommended that students intending to transfer to four-year institutions meet additional course requirements as outlined in the MACRAO Transfer Agreement (see "Transfer Information"). Students should also consult appropriate Transfer Guides for specific four-year programs (available from Counseling and Advising).
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Students completing CHOICE 3 have fulfilled the requirements for this Core area.
4. Students must take a minimum of eight credits from one of the following areas: stage technology, electrical, media technology, welding or theatre. Students must consult with the Stage Technology Program Advisor regarding course selection.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 120</td>
<td>MTEC 120</td>
<td>4</td>
</tr>
<tr>
<td>STEC 120</td>
<td>STEC 120</td>
<td>3</td>
</tr>
<tr>
<td>THEA 110</td>
<td>THEA 210</td>
<td>3</td>
</tr>
<tr>
<td>THEA 114</td>
<td>THEA 140</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>WRIT 121</td>
<td>4</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
STAGE TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0849 (Effective Fall 2003 - Summer 2008)

This program consists of practical, hands-on courses that provide students with the necessary technical knowledge and skills needed for an entry-level position in the stage technology industry. Upon completion of this program, students may opt to enter the workforce, apply for the Michigan Stage Technician Apprenticeship Program, continue course work toward the Associate in Applied Arts Degree in Stage Technology, or use their skills in community service at schools, theaters, and churches.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION
Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
<td>1</td>
</tr>
<tr>
<td>ELTE 110</td>
<td>Practical Electricity</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>STEC 160</td>
<td>Intro to Stage Tech Industry</td>
<td>2</td>
</tr>
<tr>
<td>STEC 120</td>
<td>Stage Lighting and Electricity</td>
<td>9</td>
</tr>
<tr>
<td>STEC 130</td>
<td>Audio/Visual Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEC 140</td>
<td>Theatrical Make-up/Wardrobe</td>
<td>3</td>
</tr>
<tr>
<td>STEC 150</td>
<td>Stage and Arena Rigging</td>
<td>3</td>
</tr>
<tr>
<td>THEA 114</td>
<td>Intro to Technical Theater</td>
<td>3</td>
</tr>
<tr>
<td>WELD 130</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

TOTAL: 29 CREDITS

LIMITED CHOICE REQUIREMENTS

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

| CHOICE 1: Stage Technology (See Note 1) | 10 Credits |

MINIMUM TOTAL

39

NOTE:
1. Students must take a minimum of ten credits from one of the following areas: stage technology, electrical, media technology, welding or theatre. Students must consult with the Stage Technology Program advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTE 100</td>
<td>MTEC 120</td>
<td>STEC 140</td>
</tr>
<tr>
<td>ELTE 110</td>
<td>STEC 130</td>
<td>STEC 150</td>
</tr>
<tr>
<td>STEC 120</td>
<td>THEA 114</td>
<td>WELD 130</td>
</tr>
<tr>
<td>STEC 130</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIGN 267</td>
<td>SIGN 262</td>
<td>SIGN 368</td>
</tr>
</tbody>
</table>
### STAGE TECHNOLOGY APPRENTICE

#### ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0971 (Effective Fall 2003 - Summer 2008)

The Stage Technology Program provides training in technical skills associated with the stage technology industry. The Associate Degree in Applied Science is particularly useful for those individuals wishing to pursue advanced careers in this industry, such as management positions or permanent jobs at entertainment facilities. In order to begin this curriculum, students MUST first be accepted as a registered apprentice in the Michigan Stage Technician Apprenticeship Program (MSTAP), MSATP/AICAT, IATSE Local 274, State AFL-CIO Building, 419 S. Washington Avenue, Lansing, MI, 48933. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

### INFORMATION

Contact the Humanities and Performing Arts Department, Arts and Science Building, Room 255, telephone number (517) 483-1018.

### REQUIREMENTS FOR ADMISSION TO THE STAGE TECHNOLOGY PROGRAM FOR MSTAP APPRENTICES

For current information about admission requirements, contact the Humanities and Performing Arts Department, Arts and Science Building, Room 255/4, telephone number (517) 483-1407.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
<td>1</td>
</tr>
<tr>
<td>ELTE 110</td>
<td>Practical Electricity</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 150</td>
<td>Electric Motor Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 100</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 122</td>
<td>Sound Reinforcement</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 223</td>
<td>Sound Reinforcement Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 252</td>
<td>Lighting for Television/Video</td>
<td>3</td>
</tr>
<tr>
<td>STEC 100</td>
<td>Intro to Stage Tech Industry</td>
<td>2</td>
</tr>
<tr>
<td>STEC 110</td>
<td>Stage Tech Field Experience (See Note 1)</td>
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<tr>
<td>STEC 120</td>
<td>Stage Lighting and Electricity</td>
<td>3</td>
</tr>
<tr>
<td>STEC 122</td>
<td>Advanced Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>STEC 130</td>
<td>Audios/Visual Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEC 140</td>
<td>Theatrical Make-Up/Wardrobe</td>
<td>3</td>
</tr>
<tr>
<td>STEC 150</td>
<td>Stage and Arena Rigging</td>
<td>3</td>
</tr>
<tr>
<td>STEC 206</td>
<td>STEC Internship</td>
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</tr>
<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA 114</td>
<td>Intro to Technical Theatre</td>
<td>3</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 111</td>
<td>Gas Tungsten ARC Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

### TOTAL: 56 CREDITS

### LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>STEC</td>
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<td></td>
</tr>
<tr>
<td>THEA</td>
<td></td>
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</tr>
<tr>
<td>THEA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WELD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TOTAL: 16-20 CREDITS

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

#### CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>4-5</td>
</tr>
<tr>
<td>Writing Core Area</td>
<td>3-4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL:**

22

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**NOTES:**

1. STEC 110 must be taken four times for a total of 4 credits toward this degree. Stage Technology Field Experience involves variable hours that are determined by work calls from all and associate members of the MSTAP Joint Apprentice Training Committee (JATC). Most work calls will come through IATSE Local #274.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
</tr>
</thead>
</table>
| I    | ELTE 100  
|      | ELTE 110  
|      | ELTE 150  
|      | MTEC 100  
|      | MTEC 122  
|      | STEC 110  
|      | THEA 114  
|      | WELD 100  
|      | WELD 111  |
| II   | ELTE 150  
|      | MTEC 110  
|      | STEC 112  
|      | THEA 114  
|      | Lim. Ch.  
|      | Lim. Ch.  |
| III  | MTEC 223  
|      | STEC 120  
|      | THEA 110  
|      | WELD 100  
|      | WELD 111  |
| IV   | MTEC 123  
|      | THEA 111  
|      | Lim. Ch.  
|      | Lim. Ch.  |

---

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

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# General Technology Associate in Applied Science Degree

## Curriculum Code: 0213 (Effective Fall 2003 - Summer 2008)

This curriculum is designed to provide an individual with a multi-discipline technical background. The technical courses and supporting courses that comprise this degree provide the flexibility to match the student's interest with the skills necessary for job entry. For example, this curriculum is often pursued by apprentices who complete most of the requirements for this degree through their related training requirements and who also wish to earn an associate degree. Students interested in pursuing careers in a specific technical area should see a faculty advisor in their career center.

### Prerequisites

Students should see Course Descriptions or Course Offerings for course prerequisites. Information See the Assessment and Placement Testing section for skills assessment and advising information.

### Information

Contact the Manufacturing and Land Technologies Department, Gannen Vocational-Technical Center, Room 1380, telephone number (517) 493-1336.

### Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 010</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>EMSA 010</td>
<td>First Aid and CPRI</td>
<td>2</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metalurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>QMUL 100</td>
<td>Intro Quality Assurance</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 120</td>
<td>The Art of Physics</td>
<td>4</td>
</tr>
<tr>
<td>SPCCH 100</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

### Limited Choice Requirements

<table>
<thead>
<tr>
<th>Total: 22 Credits</th>
</tr>
</thead>
</table>

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

#### Choice 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

- Communication Core Area (See Note 1)
- Global Perspectives and Diversity Core Area (See Note 1)
- Mathematics Core Area (See Note 1)
- Science Core Area (See Note 1)
- Writing Core Area (See Note 1)

#### Choice 2: Applied Technology Related (See Note 2)

**Minimum Total:**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

### Notes:

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

2. Contact an advisor in GVT 1380 or call (517) 493-1338 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>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMSA 010</td>
<td>MACH 135</td>
<td>CADD 110</td>
<td>PHYS 120</td>
</tr>
<tr>
<td>MACH 100</td>
<td>MATH 115</td>
<td>WRIT 124</td>
<td>SPCCH 110</td>
</tr>
<tr>
<td>MATH 114</td>
<td>MGMT 234</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>QMUL 100</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

*Students are responsible for completing all requirements as stated. The only official documentation of program completion stated is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.*
TOUR CRUISE OPERATIONS
CERTIFICATE OF COMPLETION

Curriculum Code: 0920 (Effective Fall 2003 - Summer 2008)

This curriculum is designed for individuals with travel experience who are interested in careers with cruise lines or tour operators. It gives students the basic skills and knowledge for entry level positions in businesses that offer group tours, tour packages, or cruises.

PREREQUISITES
Students should see Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 228</td>
<td>Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>SPOCH 130</td>
<td>Fundamental of Public Speaking (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 145</td>
<td>Intro Cruise Sales/Ground Team</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 210</td>
<td>Group Travel/Excursion Ops</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 15 CREDITS

NOTE:
1. This course does not fulfill the Speech Communication Core requirement for those students planning to pursue an associate degree.

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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 228</td>
<td>Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 100</td>
<td>Travel Agency Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 135</td>
<td>Airline/Airport Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 16 CREDITS

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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISB 102</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 100</td>
<td>Travel Agency Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 135</td>
<td>Airline/Airport Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
<td>3</td>
</tr>
</tbody>
</table>
# Travel and Tourism Associate in Business Degree

Curriculum Code: 0229 (Effective Fall 2003 - Summer 2008)

Travel agents, tour escorts, cruise line and airline personnel plan trips and arrange lodging, meals and transportation for customers. They may specialize in foreign or domestic travel, individual or group travel, or a specific geographical area. Travel customer service representatives are employed by airlines, cruise lines, tour companies, railroads, and travel agencies to provide travel information and arrange accommodations on behalf of visitors. They answer questions, offer suggestions, verify arrival/departure times, and provide information on trip excursions, sports events, concerts, and plays. Travel tour agents and airline personnel may contact with customers by phone, in person, or plan trips for them in response to their requests. 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 Course Descriptions or Course Offerings for course prerequisite information. See the Assessment and Placement Testing section for skills assessment and advising information.

## INFORMATION
Contact the Business Department, Old Central Building, Room 210, telephone number (317) 481-1528.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 110</td>
<td>Intro to Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 101</td>
<td>Intro to Hospitality/Travel Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 100</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 100</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 125</td>
<td>Destinations I</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 130</td>
<td>Destinations II</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 131</td>
<td>Destinations III</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 145</td>
<td>Intro Cruise Sales/Ground Train</td>
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</tr>
<tr>
<td>TRVL 190</td>
<td>Internship</td>
<td>2</td>
</tr>
<tr>
<td>TRVL 200</td>
<td>Sales/Management for Travel/Tourism</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 250</td>
<td>Travel/Tourism Law</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 255</td>
<td>Airport Computer Reservations II</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 265</td>
<td>Fund of Business Travel</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 275</td>
<td>Travel Industry Practicum</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 47 CREDITS**

### LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>Intro to Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 120</td>
<td>Intro Cruise Sales/Ground Train</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 130</td>
<td>Destinations II</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 131</td>
<td>Destinations III</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 145</td>
<td>Intro Cruise Sales/Ground Train</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 190</td>
<td>Internship</td>
<td>2</td>
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<tr>
<td>TRVL 200</td>
<td>Sales/Management for Travel/Tourism</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 250</td>
<td>Travel/Tourism Law</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 255</td>
<td>Airport Computer Reservations II</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 265</td>
<td>Fund of Business Travel</td>
<td>3</td>
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<tr>
<td>TRVL 275</td>
<td>Travel Industry Practicum</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 23-26 CREDITS**

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

### CHOICE 1: General Education Core Areas

(See General Education Core Requirements for information on how to fulfill these requirements. Core area proficiency exams, where appropriate, are available for each core area.)

<table>
<thead>
<tr>
<th>Core Area</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Mathematics Core Area</td>
<td>3-4</td>
</tr>
<tr>
<td>Science Core Area</td>
<td>4-5</td>
</tr>
<tr>
<td>Writing Core Area (See Note 1)</td>
<td>0</td>
</tr>
</tbody>
</table>

**TOTAL: 16-13 CREDITS**

### CHOICE 2: Specific Travel Occupations

(Choose one subchoice)

**Subchoice 2A: Tour/Cruise Operations**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMFS 229</td>
<td>Convention/Meeting Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing/Resort Management</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 210</td>
<td>Group Travel/Event Coordination</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL: 70 CREDITS**

**NOTE:**
1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.

### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who have any questions about the courses offered in the sequence suggested below, or those who are part-time, should contact an academic advisor or counselor for help with adjustments.
TRUCK DRIVER TRAINING

CERTIFICATE OF COMPLETION

Curriculum Code: 0262 (Effective Fall 2003 - Summer 2004)

A truck driver operates a commercial vehicle that weighs over 10,000 pounds and is used in either intra-state or interstate travel. A person must be able to safely operate a large displacement vehicle in all traffic conditions. Truck drivers also need to maintain records that are required by state and federal regulations and employers. Before beginning the program, students must pass a physical and eye exam as well as a good driving record. Students are subject to drug and alcohol testing as required by the Department of Transportation. There is no driving requirement, 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 Course Descriptions or Course Offerings for course prerequisites information. See the Assessment and Placement Testing section for skills assessment and advising information.

INFORMATION

The admission and graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2003-2004 academic year. For the most recent and complete information, interested students should contact Lansing Community College, Truck Driver Training Program, 2417 25th Street, Augusta, MI 49012, telephone number (616) 731-4125.

REQUIREMENTS FOR ADMISSION TO THE TRUCK DRIVER TRAINING PROGRAM

Curriculum Code: 0718

In order to be considered as a candidate for the 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 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 checked through the Secretary of State and reviewed individually. The school will apply for each applicant's Motor Vehicle Record which takes 10-14 days to receive.

c. Must be eligible for a "Temporary Instruction Permit" (T.I.P.). The State of Michigan requires all truck drivers to have a Commercial Driver's License. Any person planning to drive a tractor-trailer unit (such as those operated by Lansing Community College) must be in possession of a T.I.P. or "Temporary Instruction Permit". WE WILL PREPARE STUDENTS TO OBTAIN THEIR "T.I.P." DURING THE FIRST WEEK OF CLASS. Written tests will be administered by Secretary of State personnel in the L.C.C. classroom.

Persons shall be considered ineligible for a T.I.P. if they:

• Fail to pass the written examination.
• Have been charged in the 24 months immediately preceding application with a total of 12 or more points.
• Have had their license suspended or revoked in the 36 months immediately preceding application unless that suspension or revocation was due to a violation by temporary medical condition, failure to appear for re-exam or failure to appear in court for a traffic violation, an unsatisfied judgement or a no-fault insurance violation.
• Have been convicted of a 6 point violation or an impaired driving charge (4 points) in the 24 months immediately preceding application. Applicants residing outside the State of Michigan must supply a copy of their own driving record from the State in which they are licensed and must possess a T.I.P. from their licensing State.

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 T.D.P. MUST RECEIVE THE APPLICANTS COMPLETED D.O.T. PHYSICAL FORM SIGNED BY A PHYSICIAN BEFORE ACCEPTANCE INTO THE PROGRAM. The fee for the physical examination is the applicant's responsibility.

f. Be at least 18 years old. Those persons between the ages of 18 & 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 an applicant. APPLICANTS SHOULD KNOW HOW TO SHIFT A STRAIGHT STICK TRANSMISSION AND USE A CLUTCH PRIOR TO ATTENDING.

TRUCK DRIVER TRAINING PROGRAM REQUIREMENTS

Curriculum Code: 0262

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDTP 110 Truck Driver Training I</td>
<td>3</td>
</tr>
<tr>
<td>TDTP 111 Truck Driver Training II</td>
<td>3</td>
</tr>
<tr>
<td>TDTP 112 Truck Driver Training III</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 9

NOTE:

1. The program provides 140 hours in range and highway driving and 80 hours in classroom instruction situations. Range training includes an over-the-road trip of over 1,000 miles, permitting the students to gain over-the-road experience.
COURSE Descriptions

2003-2005 CATALOG
HOW TO READ COURSE DESCRIPTIONS

Each course description has seven (7) categories of information as follows:
1. Course code
2. Course title
3. Number of semester credit hours
4. Prerequisite
5. Course description
6. Semester planned

Previous courses, skill levels, training and/or experience required for enrollment. Other prerequisites may be added. See Course Schedule or department each semester for current information.

Indicates when department plans to offer course, but does not guarantee that the course will be offered. See Course Schedule or department each semester for current information.

For example:

COURSE CODE | COURSE TITLE | SEMESTER CREDITS
---|---|---
AVEL 220 | Avionics Systems I | 4

Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum
Restriction: Avionics Majors
Corequisite course: AVEL 221
Recommended: AVEL 191
A study of the communications, navigation, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. Students will have the opportunity to obtain factory certification for the repair of various systems (F).

F = Fall; Sp = Spring; Su = Summer

COURSE DESCRIPTION

COURSES CODES USED IN DESCRIPTIONS

Courses are listed in course code order. The sequence is as follows:

ACCT Accounting
AERO Aerospace Studies
AGRI Agriculture
ANTH Anthropology
ARCH Architecture
ARTS Art, Design and Multimedia
ARTS Art Seminars and Workshops
ASTR Astronomy
AUTO Auto Body Collision Repair
AUTO Automotive
AVAF Aviation Airframe Maintenance
AVEL Aviation Electronics
AVFT Aviation Flight Training
AVGM Aviation General Maintenance
AVGS Aviation Ground School
AVIR Aviation Instrument Repair
AVPP Aviation Powerplant Maintenance
AVST Aviation Simulator Training
BDCS Business Development Seminars
BIOL Biology
BLSR Building Related
BLDT Building Trades
BUSN Business
CABS Computer Applications Using Business Software
CAD Computer-Aided Drafting and Design
CHEE Continuing Health Careers
CHDV Child Development
CHEM Chemistry
CHSE Community Health Services
CISB Computer Information Systems for Business
CIVL Civil Technology
CSYS Criminal Justice
CNP Computerized Numerical Control Program
CPSIC Computer Science
CUAI Credit Union Accounting and Insurance
CUAM Credit Union Management
DANC Dance
DENY Dental Hygiene
ECON Economics
EDUC Education
ELCT Electronics Technology
ELTE Electrical Technology
EMS Emergency Medical Services
EMS Emergency Medical Services Seminar
EMTA Emergency Medical Technology
ENGL English
ENRI Enrichment
ENV Environmental Science
ESLP English as a Second Language
FASH Fashion
FILM Film Production and Direction
FIRE Fire Science
FLNG Foreign Language
FREN French
GEOG Geography
GEOL Geology
GERO Gerontology
GEOG Geographic Information Systems
GERN German
HECT Heavy Equipment Operator Training
HEET Heavy Equipment Repair Technician
HIST History
HMF Hotel and Motel Food Service Operations
HONR Honors
HORT Horticulture
HUMS Humanities
HUSE Human Services
HVAC Heating, Ventilating, and Air Conditioning
IDNS Diagnostic Medical Sonography
IMAG Photography Technology
INJS Insurance
INTR Interior Design
IRKT Radiologic Technology
ISCI Integrated Science
JAPN Japanese
JRNJ Journalism
LABR Labor Relations
LAND Landscape
LEGAL Legal Assistant/Law
LING Linguistics
SIACH Machine Tool Technology  
MASG Massage Therapy  
MATH Mathematics  
METR Meteorology  
MFGM Manufacturing Maintenance  
MGMT Management  
MILS Military Science  
MKTG Marketing  
MTEC Media Technology  
MUSC Music  
NURS Nursing  
OADM Office Administration  
PARA Paramedics  
PPAQ Physical Fitness: Aquatics  
PFDA Physical Fitness: Dance  
PFIT Physical Fitness: Fitness  
PFHW Physical Fitness: Health/Fitness Wellness  
PFKN Physical Fitness: Kinesiology  
PFSP Physical Fitness: Team and Individual Sports  
PFWT Physical Fitness: Weight Training  
PHIL Philosophy  
PHON Phonics  
PHYS Physics  
POLS Political Science  
PSYC Psychology  
QUAL Quality Assurance  
RDGR Reading: Restricted  
READ Reading  
REAL Real Estate  
RELG Religion  
SCIN Science Technology Internship  
SCIS Science Seminars  
SDEV Student Development  
SIGN Sign Language  
SOCOL Sociology  
SOWK Social Work  
SPAN Spanish  
SPCH Speech Communication  
SPFL Spelling Development  
STAT Statistics  
STECC Stage Technology  
SURG Surgical Technology  
TDTA Truck Driver Training Program  
THEA Theater  
TRVL Travel and Tourism  
VCBL Vocabulary Improvement  
VIET Vietnamese  
WELD Welding Technology  
WRIT Writing  
WRTR Writing: Restricted
ACCG 100 - Practical Accounting Non-Major
Prerequisite: None
Students will learn the bookkeeping procedures necessary for preparation of financial statements and payroll. Manual and computer systems will be covered. (F, Sp, Su)

ACCG 101 Accounting Info for Management
Prerequisite: None
Students will learn to interpret financial statements and use this information for analysis, budgeting, and decision making. (F, Sp)

ACCG 140 Income Tax Preparation
Prerequisite: None
Students will complete individual income tax returns and supporting schedules according to the Internal Revenue Code. The focus is on the completion of forms rather than the theoretical aspects of the tax law. (F)

ACCG 190 Payroll Systems and Taxes
Prerequisite: None
Recommended: ACCG 100 or Equivalent Work Experience
This course covers laws affecting payroll, calculation of payroll and payroll taxes using both manual and computer payroll systems, preparation of tax forms for payroll taxes, salaries and uses taxes, and personal property taxes. (Su)

ACCG 210 Principles of Accounting I
Prerequisite: None
Recommended: Algebra Knowledge
Principles of Accounting I is the first class of a two-semester sequence focusing on financial accounting, including accounting for service organizations and 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
Prerequisite: ACCG 210 2.0 minimum
Recommended: Intermediate Algebra or Higher
Principles of Accounting II is the second course in the two-semester accounting sequence. Topics include statement of cash flows, budgets and other financial 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
Prerequisite: ACCG 211 2.0 minimum
Recommended: Electronic Spreadsheet Experience
Financial Accounting and Reporting in accordance with Generally Accepted Accounting Principles including a review of financial accounting covered in the Principles course. Topics include the conceptual framework and environment of accounting, time-value-of-money, current assets and liabilities, plant assets, intangible assets, and note disclosures involved in presenting financial statements. (F, Sp)

ACCG 221 Intermediate Accounting II
Prerequisite: ACCG 220 2.0 minimum
Continuation of ACCG 220 covering financial accounting and reporting in accordance with GASB. Topics include stockholders' equity, earnings per share, investments, revenue recognition, accounting for income taxes, and long-term liabilities including pensions and capital leases, statement of cash flows, changes and error corrections, and full disclosure in financial reporting. (F, Sp)

ACCG 230 Cost Accounting
Prerequisite: ACCG 211 2.0 minimum
Recommended: Electronic Spreadsheet Experience
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
Prerequisite: ACCG 230 2.0 minimum
This course focuses on the accountant’s role in the organization; cost information gathering, processing and reporting for various decision and control purposes, pricing, cost allocation, project control, mix and yield variances, uncertainty, variance investigation, inventory management, cost management; strategic planning, and management control. (Sp)

ACCG 233 Budgeting
Prerequisite: ACCG 211 2.0 minimum
This course covers the budget cycle of an organization, both public and private, from a managerial perspective. Topics covered include budgetary terms, concepts and general format, performance budgeting, program budgeting, zero base budgeting, budgeting approval process, budgetary control, and the auditing phase of a budget. (F)

ACCG 240 Federal Income Tax I
Prerequisite: ACCG 211 2.0 minimum
This class is the first in a two-semester sequence in federal income tax. This course deals with taxation of individuals from a historical and theoretical perspective, as well as preparation of individual income tax returns under current tax law. (F, Sp)

ACCG 241 Federal Income Tax II
Prerequisite: ACCG 240 2.0 minimum
This class is the second in a two-semester sequence in federal income tax. This course deals with the taxation of corporations, partnerships, estates, trusts, and tax exempt entities from a historical and theoretical perspective, as well as preparation of tax and information returns under current tax law. (Sp)

ACCG 245 Accounting Internship
Prerequisite: ACCG 210 2.0 minimum and Department Approval
This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 120 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, account related, and provide an appropriate learning situation. (F, Sp, Su)

ACCG 250 Advanced Accounting
Prerequisite: ACCG 221 2.0 minimum
This course covers business consolidations, foreign currency accounting, and partnerships in depth. In addition, the course provides an overview of governmental and nonprofit accounting. (Su)

ACCG 250 Accounting Systems
Prerequisite: ACCG 210 2.0 minimum
Recommended: Keyboarding Experience
Accounting Systems prepares students to work with and design information systems and to use the scientific methods in problem solving. Issues and problems related to microcomputers and other technology on accounting systems are emphasized. Students analyze systems, work with manual and computerized accounting systems, database design, and problem solving with spreadsheets. (F, Sp)

ACCG 260 Independent Study Accounting
Prerequisite: Department Approval
With this course, students will learn advanced accounting topics as an independent study, or a project. Grading criteria and course objectives are determined at a meeting between the student and program advisor. It is expected that the student will spend approximately 40 independent study hours per credit. (F, Sp, Su)

ACCG 271 Principles of Finance
Prerequisite: ACCG 211 2.0 minimum
This course emphasizes the short- and long-term decisions a financial manager may face. Topics include working capital management, risk, cost of capital, capital markets, long-term debt, stocks and dividend policy, mergers and acquisitions, and international financial markets as these topics relate to obtaining financing for a business. (Su)

ACCG 280 Governmental Accounting
Prerequisite: ACCG 211 2.0 minimum
Applications of fund accounting principles are applied to governmental (local and state) and not-for-profit entities. Students learn skills necessary to understand the organization, accounting functions, auditing, and financial reporting practices of governmental and non-profit organizations. Governmental Accounting Standards Board (GASB) and Financial Accounting Standards Board (FASB) requirements are taught. (Sp)
ACCG 290 – ANTH 271

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ACCG 290 – Auditing
Prerequisite: ACCG 220 3.0 minimum
Students will primarily learn about the audit of historical financial statements as performed by certified public accounting firms. Material covered on the CPA exam will be emphasized. An extensive practical case that provides simulated hands-on experience will be included. (F)

ACCG 295 – CPA Review - Tax, Mgr, Cost, Gov
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
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
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
This course is designed to provide CPA exam candidates with a review of business law, especially the provisions of the Uniform Commercial Code. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 297 – CPA Review - Auditing
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
This course is designed to provide CPA exam candidates with a review of audit concepts, assumptions, and procedures. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

AERO - Aerospace Studies

AERO 111 – USAF Foundation I
Prerequisite: None
This course provides an introduction to the U.S. Air Force today. Course topics include mission and organization, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (F)

AERO 112 – USAF Foundation II
Prerequisite: None
This course provides an introduction to the U.S. Air Force today. Course topics include citizenship and professionalism, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (Sp)

AERO 211 – Evolution of USAF I
Prerequisite: None
This course focuses on Air Force heritage. Course topics include evaluation of air power concepts and doctrine, introduction to ethics and values, introduction to leadership, and the continuing application of communication skills. Includes a leadership laboratory. (F)

AERO 212 – Evolution of USAF II
Prerequisite: None
This course continues the historical perspective of AERO 211 beginning with Vietnam. Course topics include the role of technology in the growth of air power, introduction to Quality Air Force, group leadership problems, and the continuing application of communication skills. Includes a leadership laboratory. (Sp)

AGRI – Agriculture

AGRI 101 – Principles/Precision Agritech
Prerequisite: None
This course introduces the field of precision agricultural technology. The combining of the latest technologies, i.e., Global Positioning Systems and Integrated Pest Management, make traditional agricultural practices as accurate and customized as possible for each specialized crop. (F, Sp)

AGRI 106 – Disease/Insect Agrionomic Crops
Prerequisite: None
This course is for the professional applicator or farm operator interested in a basic knowledge of insects, diseases, vertebrates, and microorganisms that affect agronomic crops. Environmental problems, soil, fertilizers, planting, integrated pest management, and problem solving techniques will be stressed. Can be used toward pesticide certification by the Michigan Department of Agriculture. (Sp)

AGRI 200 – Vegetation and Weed Management
Prerequisite: None
Students will develop skills necessary to monitor, control, and identify by species both vegetation and weed plants. Vegetation will be evaluated from seeding to mature stage for proper control measures by both natural and chemical controls. Various chemicals will be judged for environmental impact and effective control. (F, Sp)

AGRI 201 – Prim/Sustainable Agriculture
Prerequisite: None
The modern era principles of sustainable agriculture will be covered by way of lecture and demonstration. The practice of proper plant selection, species requirements, land use, fertilization needs, and pesticide practices will be highlighted. Scientific practices utilized in plant genetics and technology applications will also be discussed. (Sp)

AGRI 202 – Agri Soils and Crop Management
Prerequisite: None
This course covers all aspects of soils related to agricultural production of food and fiber crops. Soil classification, texture, composition and conditions will be analyzed, evaluated and managed. Soil conditions relating to environmental fertilization and composition problems will be evaluated. Soil erosion and conservation management practices will also be highlighted. (F, Sp)

AGRI 211 – Agricultural Crop Production
Prerequisite: None
This course will focus on the basic components of cash crop production in the modern agricultural environment. Crop identification management and harvesting techniques will be highlighted for the major crops utilized in today's marketplaces. Crop production techniques will be emphasized with a thorough evaluation of modern technology practices. (Sp)

AGRI 212 – Vegetable Crop Production
Prerequisite: None
This agricultural production course will cover the seed production, planting, management, IPM and harvesting of vegetable crop plants. Vegetable crops such as sweet corn, tomatoes, peppers, beans, spinach, melons, peas and cold weather crops will be discussed. Vegetable crop marketing in the Great Lakes region will also be discussed. (F, Sp)

AGRI 213 – Ag Site Specific Research Tech
Prerequisite: None
This course will evaluate the various new technologies available to farmers and agriculturists. Technologies such as computers, GIS systems, GPS receivers, field monitors, sensors, and computers, etc. will be evaluated as to their function and incorporation into specific farming production practices. IPM and crop genetic technologies will also be discussed. (Sp)

ANTH – Anthropology

ANTH 270 – Cultural Anthropology
Prerequisite: Reading Level 5 and Writing Level 6
This course explores ways of life for societies worldwide using anthropological theory and methodology. Basic institutions of pre-industrial societies, such as kinship, religion, law, politics, and economics are examined to provide a better understanding of the diversity of contemporary societies. Cultural variations and the role culture plays in adapting to the environment is emphasized. (Sp)

ANTH 271 – Medical Anthropology
Prerequisite: Reading Level 5 and Writing Level 6
An overview of concepts used in anthropology of health and illness, and delivery of health care in diverse settings. Biocultural and cultural approaches to illness are examined from a comparative cross-cultural perspective against a background of evolutionary ecology, illustrating how therapeutic systems form an integrated aspect of society and culture. (F)
Anthony 275 — Architecture

Prerequisites: Reading Level 5 and Writing Level 6
Recommended: SOCL 120

An overview of human cultural and evolutionary development as evidenced in fossil records. Mechanisms of biological and cultural evolution will be traced from prehistoric origins through the development of modern homo sapiens. Major theoretical approaches and methodologies within the subdisciplines of anthropology will be incorporated. (F)

Anthony 276 — World Archaeology

Prerequisites: Reading Level 5 and Writing Level 6
Recommended: ANTH 275 and/or SOCL 120

A general survey of archaeology includes an overview of the history of the field and the basic theories and methods employed in the study of prehistoric and historic cultures. Archaeological data and sites are used to explain the extention and continuation of human societies. (Sp)

ARCH - Architecture

Anthony 101 — Intro to Architecture Drawing

Prerequisite: Math Level 3

Students will be introduced to the proper techniques of architectural line work, lettering, orthographic projection, and axonometric drawings. Techniques of architectural dimensioning, the use of symbols, and the production of a basic floor plan and elevations will be accomplished. (F, Sp, Su)

Anthony 102 — Residential Detailing

Prerequisite: ANSI 101 2.0 minimum

Recommended: ANSI 121 and ANSI 128

Students will use previously obtained basic drafting techniques and knowledge of residential detailing to design residential projects, residential floor plans, elevations, and building sections. (F, Sp, Su)

Anthony 121 — Visual Communication I

Prerequisite: ANSI 120.0 minimum or Concurrently

This course concentrates on architectural graphics and will introduce students to basic techniques of freehand sketching, drafting, orthographic, axonometric, and perspective drawings. Emphasis will be on the development of presentation drawing techniques. (F, Sp, Su)

Anthony 122 — Visual Communication II

Prerequisite: ANSI 121-2.0 minimum

This course is a continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media. (Sp)

Anthony 125 — Architectural Model Building

Prerequisite: None

Students in this course will enhance their design and communication skills by developing various techniques for building three-dimensional architectural models. Examples constructed will range from the most basic of study models, using readily available materials, to more sophisticated presentation models. (F, Sp)

Anthony 128 — Residential Design

Prerequisite: ANSI 100 2.0 minimum

This course is a continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media. (Sp)

Anthony 141 — Architectural History I

Prerequisite: None

Beginning with ancient times, this course studies the major civilizations and works of architecture, and analyzes the form and function of the built environment created by the most significant of the Western civilizations. A variety of visual media will be used to present the major theories, architectural works, and the significant personalities contributing to architecture up to the Italian Renaissance. (F, Sp)

Anthony 142 — Architectural History II

Prerequisite: None

Recommended: ANTH 141

This course is the second in a series about the architectural history of the western world. The works and figures of architecture and the decorative arts in western architectural history from the 1600s to contemporary times are examined. (F, Sp)

Anthony 146 — Pres/Adaptive Reuse Architect

Prerequisite: None

This course is designed as an overview of the principles and practices of preservation, restoration, and adaptive reuse architecture. Students will have the opportunity to work on a project of their choosing while being introduced to research methods, publications, and examples of preservation and the adaptive reuse of existing structures. (F, Sp)

Anthony 181 — Barrier-Free Design

Prerequisite: None

Access for people with disabilities to buildings and other man-made environments will be discussed as well as the application of the Americans with Disabilities Act (ADA) and other residential and commercial building codes. Elements of successful design will be emphasized as well as their design and construction. (F, Sp, Su)

Anthony 182 — Universal Design

Prerequisite: None

Recommended: ANTH 100 or ANTH 151

Students will learn to apply the requirements of the Americans with Disabilities Act (ADA) and building codes to successfully design solutions to both commercial and residential design problems. Both study cases and original design projects will be used as well as first-hand experiences. (F, Sp)

Anthony 201 — Commercial Design

Prerequisite: ANSI 100 2.0 minimum and Math Level 4

Recommended: ANSI 141 or Concurrently

Students will use previously obtained drawing, research, and presentation skills to design, delineate, and present a light commercial project from basic schematics to presentation drawings. (F, Sp, Su)

Anthony 202 — Commercial Drawing

Prerequisite: ANSI 201 2.0 minimum

Recommended: ANSI 271 or Concurrently

Students will use previously obtained drawing, research, and presentation skills to complete working drawings including floor plans, elevations, sections, and details for the light commercial projects started in ANSI 201. (Sp)

Anthony 211 — Design Studio

Prerequisite: ANSI 120 2.0 minimum

This course is an introduction to the basic theories and methods of architectural design, problem-solving techniques, and design methodologies using contemporary architecture 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)

Anthony 213 — Facilities Design

Prerequisite: ANSI 100 2.0 minimum

In this course, students will explore, tour, and study the design theory behind a full range of structures used for office and manufacturing purposes. Systems of manufacturing and how they relate to the structures which house them will be studied. (F, Sp)

Anthony 221 — Architectural DataCAD I

Prerequisite: None

Recommended: ANSI 100 or Equivalent and Windows Experience

This is an introduction to architectural computer-aided drafting. Students will use DataCAD’s Edit and Utility functions to create a series of two-dimensional drawings, including floor plans, elevations, and building sections. An introduction to DataCAD’s 3-D Modeler will also allow students to develop basic three-dimensional images. (F, Sp, Su)

Anthony 222 — Architectural DataCAD II

Prerequisite: ANSI 221 2.0 minimum

This course is an expansion of ANSI 221 and will develop students’ skills by introducing advanced two-dimensional operations, the creation and use of text, and plane and space, and a complete overview of DataCAD’s macro program. Complete three-dimensional modeling will be taught including complex 3-D entities for developing professional presentations. (F, Sp)
ARCH 225  Arch DataCAD Independent Study 1-4
Prerequisite: ARCH 222 2.0 minimum and Department Approval
This course is intended to give advanced architectural students an opportunity to complete a special project(s) that relates to the student's curriculum. The student will research, outline, design and construct a project(s) of their own selection with the approval and guidance of the instructor, using the DataCAD software program. (F, Sp, Su)

ARCH 231  Architectural AutoCAD I 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
This entry-level course introduces AutoCAD, a PC-based computer graphic system, for architectural applications. Students will concentrate on two-dimensional drawing and editing functions for creating floor plans, elevations, and building sections. An introduction to three-dimensional modeling techniques will also be covered. (F, Sp, Su)

ARCH 232  Architectural AutoCAD II 4
Prerequisite: ARCH 231 2.0 minimum
This course is a continuation of the basic introduction of AutoCAD, and utilizes advanced two-dimensional techniques and a strong emphasis in the three-dimensional environment. The course will also emphasize advanced methods of drafting file setup, presentation techniques, and introduces the student to various methods of program customization. (F, Sp)

ARCH 235  Arch AutoCAD Independent Study 1-4
Prerequisite: ARCH 231 2.0 minimum and Department Approval
This course is intended to give advanced architectural students an opportunity to complete a special project(s) that relates to the student's curriculum. The student will research, outline, design and construct a project(s) of their own selection, with the approval and guidance of the instructor, using the AutoCAD software program. (F, Sp, Su)

ARCH 237  Arch Computer Rendering 3
Prerequisite: None
Recommended: ARCH 222 or ARCH 232 and Windows Experience
This course is intended for the advanced architectural computer graphics student. Using the three-dimensional graphics skills obtained in one or more of the architectural preliminary computer graphics courses, students will learn to produce three-dimensional wire-frame models, advanced architectural computer renderings, and photo realistic pictorials. (Sp)

ARCH 271  Structural Theory 4
Prerequisite: Math Level 4
Recommended: ARCH 100 or Equivalent
This course introduces the principles of statics and relates the application of physical forces to structural materials and elements. The structural and design properties of steel, wood, and concrete will be studied. The ability to read structural tables and accurately make calculations will be emphasized. (F, Sp)

ARCH 273  Environmental Systems 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent
This course is designed for architecture and interior design students. All elements affecting the interior environment of a commercial or residential structure, such as lighting, HVAC systems, and acoustics, will be studied. Calculations and the sizing of systems will be part of all sections. (F)

ARCH 274  Arch Professional Practice 3
Prerequisite: None
Students will have the opportunity to study the configuration, responsibilities, and ethics of professional architectural offices. Students in this course will examine and visit various offices of architectural, engineering, and construction industry firms. In addition, students will explore job responsibilities, personnel roles, and procedures used in the creation and production of construction documents. (F, Sp)

ARCH 276  Alternative Structures 3
Prerequisite: None
A survey of several unconventional construction types that include concrete systems, log building, pole construction, timberframe, structural insulated panel, straw bale, earthen building and earthship systems. Field examples will demonstrate many different technological concepts that relate these structures to emerging appropriate architecture issues; integrated technologies, material sustainability and recycling in construction. (F, Sp)

ARCH 278  Building Science 4
Prerequisite: None
Building science is used to examine how buildings work. The concept of systems integration is studied from the perspective of the building and its occupants in their environmental context. Computer assisted calculation of heat loss, passive solar design and economic analysis will be covered. Communication and analytic skills will be developed through classroom activities and research. (F, Sp)

ARCH 283  Materials of Construction 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent
This course consists of the evaluation of the various characteristics of all materials commonly used in residential and light commercial structures. Students will develop a sensitivity to the use of building products based on a knowledge of their properties, limitations, and availability. (F, Sp)

ARCH 293  Arch Independent Study 1-4
Prerequisite: Department Approval
This course will give advanced architectural students an opportunity to complete a special project(s) that relates to their architectural curriculum. With the approval and guidance of an instructor, the students will research, outline, design, and construct a project(s) of their own selection. (F, Sp, Su)

ARTS 102  Design & Communication 3
Prerequisite: Reading Level 5 and Writing Level 2
Recommended: Computer Experience
An examination of visual communication theory, process and history. Students will study the universal elements and principles of two-dimensional design and their applications in monochromatic, color, still, and time-based media. (F, Sp, Su)

ARTS 103  3-Dimensional Design 3
Prerequisite: ARTS 102 2.0 minimum or IMAG 112 2.0 minimum
Limit, shape, form, value, color, and texture are explored using a variety of three-dimensional materials and applying principles and elements of design. (F, Sp)

ARTS 105  Adobe Photoshop for Non-Majors 2
Prerequisite: None
Recommended: Computer experience
This course is designed to give non-majors an introduction to the Adobe Photoshop software. Students will learn file formats and saving files properly, scanning, color correction and adjustment, compositing, and image manipulation of print and digital images for web use and printed output. (F, Sp, Su)

ARTS 110  Special Topics in Fine Arts 1
Prerequisite: None
This course offers students the opportunity to learn new art techniques, skills and/or styles. These topics are open to students of all skill levels. Specific topics will vary by semester; check semester schedule book for topics to be offered. (F, Sp)

ARTS 114  Oriental Watercolor 2
Prerequisite: None
An introduction to the materials and techniques that are unique to Oriental watercolor and calligraphy. Examines rice paper characteristics and degrees of paper, brushes and tools; calligraphy; and inscriptions and seals. Students will also learn the underlying philosophy behind the practice of Oriental watercolor. (F, Sp)

ARTS 131  Drawing I 3
Prerequisite: [ARTS 102 2.0 minimum or IMAG 112 2.0 minimum or INTR 110 2.0 minimum] or Concurrently
An introductory studio course using a variety of drawing media and methods that introduces both realism and abstraction. Fundamental elements of drawing, concepts of perception, and exploring properties of various media are stressed. Basic principles of one- and two-point perspective are covered. (F, Sp, Su)

ARTS 132  Figure Drawing 3
Prerequisite: ARTS 131 2.0 minimum
Basic concepts, approaches, and techniques involving drawing the human figure, using materials such as pencil, ink, charcoal, and conte crayon. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 2003-2005
ARTS 133 Surface Anatomy for Artists 3
Prerequisite: ARTS 132 2.0 minimum or Concurrently
This course is designed specifically for the visual artist. Emphasis will be on identifying and visually representing the effects that the skeletal and muscular systems and body type have on human surface anatomy. Live models will be used. This course cannot be taken as a Science Department anatomy requirement. (F, Sp, Su)

ARTS 136 Figure Sculpture 4
Prerequisite: ARTS 132 2.0 minimum
A studio course in the 3-Dimensional representation of the human figure. The student will use various modeling tools to sculpt the figure in clay. Projects will include gestural sketches, anatomical details, and reclining, seated and standing full-figure poses. (F, Sp)

ARTS 137 Perspective Drawing 2
Prerequisite: ARTS 131 2.0 minimum
This course provides further development of the drawing process by presenting expanded perspective principles and quality of light with an emphasis on visualization. (F, Sp, Su)

ARTS 140 Printmaking I 4
Prerequisite: ARTS 102 2.0 minimum or Concurrently
An introduction to various printmaking techniques, tools, and vocabulary of the printmaker. Includes etching, calligraphy, monoprinting, and linoleum cut. (F, Sp)

ARTS 141 Printmaking II 4
Prerequisite: ARTS 140 2.0 minimum
Students expand on processes and concepts introduced in Printmaking (ARTS 140). Emphasizes refining technical skills and conceptual development. (F, Sp)

ARTS 145 Screen Printing I 4
Prerequisite: ARTS 102 2.0 minimum or Concurrently
An introduction to basic silkcreen stencil processes with an emphasis on registration techniques. Includes constructing a frame and making a phototransparency. (F, Sp)

ARTS 146 Screen Printing II 4
Prerequisite: ARTS 145 2.0 minimum
Students expand on processes and concepts introduced in Screen Printing I (ARTS 145). Includes an in-depth study of photographic processes in combination with paper, cut film, and block-out stencils. (F, Sp)

ARTS 151 Computer Graphics/Illustration 3
Prerequisite: ARTS 151 2.0 minimum
Recommended: Windows 95/98/NT Experience
An introduction to digital painting and illustration. Integrates foundational drawing and design skills with the creation and manipulation of digital art media. This course prepares students in advanced image creation for all ARTS curricula. (F, Sp, Su)

ARTS 153 Conceptual Illustration 3
Prerequisite: ARTS 131 2.0 minimum
This is an introductory level course in visual thinking, conceptual drawing and rendering, creative processes and studio practices. Students will learn to translate verbal ideas (concepts) into visual information in the form of drawings and marker renderings. (F, Sp)

ARTS 152 Typography 3
Prerequisite: [ARTS 102 2.0 minimum or IMAG 112 2.0 minimum] or Concurrently
An introduction to the uses of type in visual communication with an emphasis on creativity and problem-solving. Students will be introduced to the tools and materials of manual and digital type techniques necessary to professionally use type. (F, Sp, Su)

ARTS 171 Computer Graphics/Digital Imag 3
Prerequisite: ARTS 102 2.0 minimum or IMAG 112 2.0 minimum
Recommended: Macintosh Experience
An introduction to computer manipulation of photographic images. Topics covered include resolution, scanning, output, file formats, retouching, color correction, and compositing. (F, Sp, Su)

ARTS 173 Computer Graphics/Web Design 3
Prerequisite: ARTS 171 2.5 minimum or Concurrently
A course in visual design — the effective visual presentation of ideas for the web from concept and design to structure, preparation and production. Focus on the principles and elements of design as applied to layout, graphics and animation. (F, Sp, Su)

ARTS 175 Electronic Design 3
Prerequisite: ARTS 102 2.0 minimum and ARTS 162 2.0 minimum
Recommended: Knowledge of Mac OS and Basic Keyboarding Skills
An introduction to page layout software and vector-based illustration software programs utilizing the Macintosh computer. Emphasis is on using electronic publishing applications for design. (F, Sp, Su)

ARTS 190 Matting and Framing Techniques 1
Prerequisite: None
An overview of the various materials and techniques for displaying and exhibiting artwork. Students will apply demonstrated techniques to matting and framing their work. (F, Sp)

ARTS 195 Employable Issues for Artists 1
Prerequisite: None
An introduction to business, legal, and marketing issues relevant to visual artists. Students will be introduced to copyright, contracts and negotiation concerns, and basic record keeping. (F, Sp)

ARTS 200 Painting I 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 131 2.0 minimum
An introduction to oil and acrylic painting concepts in the Western tradition, ranging from Renaissance to Contemporary. Examines basic materials, tools, techniques, and modes of expression. (F, Sp)

ARTS 201 Painting II 4
Prerequisite: ARTS 200 2.0 minimum
A continuation of Painting I (ARTS 200) emphasizing more advanced techniques and increasingly complex problems in painting. A variety of media, techniques, and approaches is encouraged. (F, Sp, Su)

ARTS 203 Figure Painting 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 132 2.0 minimum
A studio course in the human figure using various media such as oil paint, watercolor, acrylic paint, and pastel. (F, Sp, Su)

ARTS 204 Watercolor I 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 131 2.0 minimum
An introduction to the art of transparent watercolor. Examines paper characteristics, degrees of wetness, brushes and tools, and various techniques in producing watercolor art works. (F, Sp)

ARTS 205 Watercolor II 4
Prerequisite: ARTS 204 2.0 minimum
A continuation of Watercolor I (ARTS 204) emphasizing more advanced techniques and increasingly complex problems using watercolor. (F, Sp)

ARTS 206 Advanced Watercolor 4
Prerequisite: ARTS 205 2.0 minimum
An opportunity for the advanced student to continue with his or her personal exploration and development of watercolor skills under the guidance of an instructor. (F, Sp)

ARTS 213 Illustration Fundamentals 3
Prerequisite: ARTS 132 2.0 minimum
Illustrative techniques are utilized to prepare working sketches and convert them to finished illustrations. This course includes a variety of contemporary realistic techniques. Emphasis is placed on sound craftsmanship and solving simple graphic problems through illustration. (F, Sp)

ARTS 216 Humorous Illustration I 3
Prerequisite: ARTS 132 2.0 minimum
Basic humorous illustration/cartooning foundations are demonstrated. Exercises are given on cartooning heads, animals, objects, and drawing techniques. Graded projects include a cartoon utilizing a drawing technique. Originality and imagination are emphasized. (F, Sp, Su)
ARTS 217 Humorous Illustration II  
Prerequisite: ARTS 216 2.5 minimum  
A continuation of Humorous Illustration I designed to expand the student's humorous illustration skills through a variety of black-and-white and color projects. Projects will concentrate on the various commercial applications of humorous illustration. (F, Sp)  

ARTS 221 Airbrush Techniques I  
Prerequisite: None  
Introduction to the operation and techniques of the airbrush in shading and creating textures in both black and white and color. Assignments include using various masking methods and freehand techniques. (F, Sp, Su)  

ARTS 222 Airbrush Techniques II  
Prerequisite: ARTS 181 2.0 minimum or Concurrently and ARTS 221 2.0 minimum  
A continuation of Airbrush Techniques I (ARTS 221) with an emphasis on more complex airbrushing problems including portrait rendering and painting of non-metallic surfaces. A variety of surfaces will be used including fabric, leather, fiberglass, and paper. (F, Sp, Su)  

ARTS 225 Comic Book Illustration  
Prerequisite: ARTS 216 2.0 minimum  
This class is the foundation course for producing Sequential Art. It deals with techniques applicable in the design and rendering of artwork used in contemporary illustrated publications such as comic books, comic strips, graphic novels, and editorial cartoons. (F, Sp)  

ARTS 226 Storyboards  
Prerequisite: ARTS 225 2.5 minimum  
Storyboards are the standard method of translating visual information for animation, video and film. This course teaches visual thinking and techniques for designing and drawing professional storyboards. (F, Sp)  

ARTS 228 Advanced Digital Imaging  
Prerequisite: ARTS 171 2.5 minimum  
An advanced level study in the manipulation and processing of digital photographic images. Emphasis is on professional scanning, manipulation and output of digital images using available software products. Instruction includes preparation of images for prepress (hardcopy) and soft display (Multimedia, CD-ROM and World Wide Web). (F, Sp, Su)  

ARTS 229 Comp Graphics/Adv Web Design  
Prerequisite: ARTS 173 2.5 minimum and (ARTS 228 2.5 minimum or Concurrently)  
An advanced course in integration and its application to web design problems. Focuses on the structuring of information, conceptualization and sequencing in the design of web sites. (F, Sp)  

ARTS 231 Comp Graphics/Advanced Illust  
Prerequisite: ARTS 228 2.5 minimum  
An advanced digital illustration course with an emphasis on problem-solving and integration of multiple software for purposes of output. Assignments include stylized drawing techniques and design-oriented composition. (F, Sp, Su)  

ARTS 232 Comp Graphics/2-D Animation  
Prerequisite: ARTS 216 2.5 minimum and ARTS 151 2.5 minimum and ARTS 171 2.5 minimum  
Creation of 2-D animations using the computer. Emphasis is on the theory and principles of animation. Student will develop an animation of a bipedal character. (F, Sp)  

ARTS 234 Comp Graphics/3-D Animation I  
Prerequisite: ARTS 151 2.5 minute and ARTS 171 2.5 minimum  
An introduction to 3-D solid modeling, rendering techniques and animation on a desktop graphics system. Introduction of the principles of designing for video. (F, Sp)  

ARTS 235 Comp Graphics/3-D Animation II  
Prerequisite: ARTS 234 2.5 minimum  
A continuation of 3-D Animation I (ARTS 234). Emphasis on creation of more complex models and animations. (F, Sp)  

ARTS 236 Computer Graphics/Production  
Prerequisite: (ARTS 228 2.5 minimum or Concurrently and ARTS 235 2.5 minimum or Concurrently and ARTS 228 2.5 minimum)  
This course covers analysis, design, and development of a complete electronic project such as a CD, videotape, or DVD. Techniques include recording and editing of two- and three-dimensional graphics, animation, video, audio, and imaging. Students implement theory and practice for designing, producing, and disseminating multimedia at all levels of production, including proofreading and post-production levels. (F, Sp)  

ARTS 237 Comp Graphic/Flash Game Design  
Prerequisite: ARTS 228 2.5 minimum and CISB 118 2.0 minimum  
This course introduces students to the fundamental programming concepts used to create 2D games. Students will learn what makes a good game, how to design it, and how to program it for web delivery using ActionScript, the object-oriented scripting language in Flash. (F, Sp)  

ARTS 238 Comps and Animatics  
Prerequisite: ARTS 151 2.5 minute and either ARTS 232 2.5 minute or Concurrently and ARTS 234 2.5 minute  
Recommended: Experience with a digital editing software such as Adobe Premiere or After Effects  
The purpose of this course is to prepare the student to make comprehensive presentation art for print advertising, illustrated periodicals, storyboards, and animatics. This is an advanced level sequential art and production rendering course. Students will produce artwork using traditional media as well as computer software. (F, Sp)  

ARTS 240 Art for Elementary Teachers  
Prerequisite: None  
 Especially for elementary school teachers responsible for the student art experience. Emphasis on developing a greater appreciation, awareness of art forms, and competency working with a variety of art media. Covers the creative and mental growth of children and their needs in an art situation. (F, Sp, Su)  

ARTS 251 Graphic Design I  
Prerequisite: ARTS 102 2.0 minimum and (ARTS 175 2.0 minimum or Concurrently)  
An overview of the designer's role in developing comprehensive designs for print: Collor, paper, and type selection will be emphasized. (F, Sp)  

ARTS 252 Graphic Design II  
Prerequisite: ARTS 251 2.5 minimum  
An overview of publication design and the designer's role in the creative organization of typography, photography, and illustration. Emphasis on editorial concept, format, and design considerations. (F, Sp)  

ARTS 253 Graphic Design III  
Prerequisite: ARTS 252 2.5 minimum and MKTG 140 2.5 minimum  
An advanced collaborative learning course involving corporate image and the design of promotional graphics, both two- and three-dimensional. Utilizes innovative design and media considerations. (F, Sp)  

ARTS 257 Computer Prepress Prod Tech  
Prerequisite: (ARTS 228 2.5 minute or Concurrently) and ARTS 252 2.5 minimum  
An overview of digital prepress techniques for computer-generated media, including color separations, trapping, output, and digital file preparation. Instruction includes computer system components, printing terminology and processes. The course emphasis is on professional knowledge and accuracy. (F, Sp)  

ARTS 260 Topics in Design & Multimedia  
Prerequisite: ARTS 228 2.5 minute or Concurrently  
A study of specific topics affecting the areas of graphic design and multimedia. This course is designed to expose students to the latest theories and practices in the area. Course format will include lectures, discussion, demonstration, and hands-on experiences. (F, Sp)  

ARTS 261 Topics in Design & Multimedia  
Prerequisite: ARTS 228 2.5 minute or Concurrently  
A study of specific topics affecting the areas of graphic design and multimedia. This course is designed to expose students to the latest theories and practices in the area. Course format will include lectures, discussion, demonstration, and hands-on experiences. (F, Sp)
ARTS 267 - AUTB 110  
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ARTS 267 Advanced Drawing  
Prerequisite: ARTS 131 2.0 minimum  
An advanced drawing course involving more complex problems and techniques in still life, landscape, portraits, and cloths. Includes further exploration of various materials, including color media and paper, as well as mixed media and experimental techniques. Development of personal style and technique will be emphasized. (Sp)

ARTS 269 The Portfolio  
Prerequisite: Department Approval  
Under instructor supervision, students will assemble their best work into a cohesive, relevant presentation for the purpose of securing career-oriented employment. Job search/market skills content, including creative resumes, letter-writing, and self-promotion will focus on matching individual presentations to specific career goals. ARTS 269 is intended as the final program course. (F, Sp)

ARTS 270 Comp Graphics Indep Study  
Prerequisite: Department Approval  
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive department approval. (F, Sp, Su)

ARTS 271 Printmaking Independent Study  
Prerequisite: Department Approval  
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her projects to receive department approval. (F, Sp, Su)

ARTS 275 Art Independent Study  
Prerequisite: Department Approval  
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her projects to receive department approval. (F, Sp, Su)

ARTS 281 Art Internship  
Prerequisite: Department Approval  
An off-campus field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty. A minimum of 15 hours per week. (F, Sp, Su)

AFWS 120 Basic Drawing  
Prerequisite: None  
An introductory course using a variety of materials including pencil, charcoal, and ink. Fee non-majors. (F, Sp, Su)

AFWS 131 Intro to Computer Illustration  
Prerequisite: None  
A condensed, hands-on introduction to computer graphics, utilizing sophisticated, user-friendly artistic software. This workshop uses Procreate Painter on Windows computers. (F, Sp, Su)

AFWS 133 Intro Electronic Page Layout  
Prerequisite: None  
A condensed hands-on workshop designed to provide the student with a working knowledge of Aldus PageMaker or Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp, Su)

AFWS 136 Intro to Adobe Illustrator  
Prerequisite: None  
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Illustrator software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp, Su)

AFWS 137 Intro to Adobe Photoshop  
Prerequisite: None  
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Photoshop software. Emphasis is on desktop publishing applications. (F, Sp, Su)

AFWS 138 Multi-Media Web Graphics  
Prerequisite: None  
A hands-on course designed to provide the student with a working knowledge of multi-media and web page design. Emphasis is on web design issues for artists, creative and/or visual learners using Macintosh computers and a variety of multimedia/web software. (F, Sp, Su)

AFWS 141 Watercolor Workshop  
Prerequisite: None  
A condensed learning experience introducing the student to the art of transparent watercolor. Emphasis is on the use of different papers, degrees of wetness, strokes and techniques. Students will progress to more complex problems as ability develops. (F, Sp, Su)

AFWS 145 Landscape Painting & Drawing  
Prerequisite: None  
Emphasis is on the use of color, perspective, and compositional strategies of the landscape. Most sessions spent in the field. All types of media are acceptable. (Su)

AFWS 201 Macromedia Dreamweaver I  
Prerequisite: None  
Recommended: Windows 95/98/NT Experience. A condensed, hands-on workshop designed to provide the student with a beginning knowledge of Macromedia Dreamweaver software for web site design. (F, Sp)

AFWS 202 Macromedia Dreamweaver II  
Prerequisite: AFWS 201  
A condensed, hands-on workshop designed to provide the student with an advanced knowledge of Macromedia Dreamweaver software for web site design. (F, Sp)

AFWS 203 Macromedia Flash I  
Prerequisite: None  
Recommended: Windows 95/98/NT Experience. A condensed, hands-on workshop designed to provide the student with a beginning knowledge of Macromedia Flash software for web site design. (F, Sp)

AFWS 204 Macromedia Flash II  
Prerequisite: AFWS 203  
A condensed, hands-on workshop designed to provide the student with an advanced knowledge of Macromedia Flash software for web site design. (F, Sp)

AFWS 221 Calligraphy I  
Prerequisite: None  
Recommended: Windows 95/98/NT Experience. A condensed, hands-on workshop designed to provide the student with a beginning knowledge of Macromedia Flash software for web site design. (F, Sp)

AFWS 224 Cartooning Workshop  
Prerequisite: None  
Emphasizes simple but imaginative characterizations and dramatic exaggeration in a variety of media (including pencil, felt tipped pen, brush and ink). Previous drawing experience helpful. (F, Sp, Su)

ASTR - Astronomy  
ASTR 201 Introductory Astronomy  
Prerequisite: Reading Level 5 and Writing Level 5 and Math Level 4  
A survey course of astronomy. Topics include the celestial sphere, apparent motions, and orbital mechanics; the nature of light, spectroscopy and astronomical instrumentation; the Earth, the Moon, the Sun and the solar system; stellar nucleosynthesis, and stellar characteristics, distances, classification and evolution; and galaxies and cosmology. (F, Sp, Su)

AUTB - Auto Body Collision Repair  
AUTB 110 Non-Structural Repair  
Prerequisite: Department Approval  
Recommended: Evidence of Mechanical Ability  
This course introduces the student to elementary repairs that are completed in the collision repair industry. This allows the student to become familiar with the collision repair field environment. (F, Sp, Su)
AUTO 112 Advanced Non-Structural Repair
Prerequisite: AUTO 110 2.0 minimum or AUTO 141 2.0 minimum
Recommended: Evidence of Mechanical Ability
This course is for students who are familiar with the auto body repair environment and are ready to begin development of specific marketable repair skills. (F, Sp, Su)

AUTO 114 Auto Body Welding and Cutting
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
This course will present welding processes that will be the basis of most of the repair techniques in any advanced auto body course. MIG, TIG, oxyacetylene, resistance spot welding and plasma arc cutting are included. (F, Sp, Su)

AUTO 116 Auto Body Structural Repair
Prerequisite: (AUTO 110 2.0 minimum or AUTO 141 2.0 minimum) and (AUTO 114 2.0 minimum or AUTO 143 2.0 minimum)
This course addresses the repair of the unibody and vehicle frames which often are damaged by major collision forces. The student will learn damage diagnosis and repair techniques including stress relief, heating, welding and corrosion protection. (F, Sp, Su)

AUTO 118 Introduction to Refinishing
Prerequisite: Department Approval
The material in this course will form the basis for all automotive refinishing work. Surface preparation, material selection and the use of hand and power tools (including automotive spray guns) will be covered. (F, Sp, Su)

AUTO 120 Advanced Refinishing
Prerequisite: AUTO 118 2.0 minimum or AUTO 145 2.0 minimum
This course builds on skills developed in AUTO 118. Overall refinishing, spot repair and color matching with a variety of contemporary color-cost materials will be stressed. (F, Sp, Su)

AUTO 122 Collision Repair Estimating
Prerequisite: AUTO 112 2.0 minimum or AUTO 142 2.0 minimum and (AUTO 115 2.0 minimum or AUTO 144 2.0 minimum) and (AUTO 120 2.0 minimum or AUTO 146 2.0 minimum)
This course prepares the student for analyzing collision damage, determining what parts are needed for repair, calculating labor allowances and figuring the total cost of repair. Collision repair manuals and computer programs will be used as sources of information. (F, Sp, Su)

AUTO 124 Automotive Plastic Repair
Prerequisite: AUTO 116 2.0 minimum or AUTO 145 2.0 minimum
This course covers repair techniques and materials for repairing the wide variety of plastic materials used in the manufacturing of current vehicles. Refinishing repaired parts is also included. (F, Sp, Su)

AUTO 160 Auto Body Repair and Painting
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
This course covers the identification and safe operation of various equipment in auto body and refinishing facilities. Students will learn to diagnose problems, make necessary repairs and perform refinishing. Disposal of hazardous wastes will be taught in accordance with applicable laws. This course follows Auto Collision Repair (F-CAR) National standards. (F, Sp, Su)

AUTO 161 Collision Repair Service Lab
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
This laboratory course is designed to provide work experience and develop trade-entry skills in general. (F, Sp, Su)

AUTO 162 Collision Repair Internship
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
Students are able to earn credits while employed as a technician in collision repair. The program coordinator must approve the training station and working conditions. (F, Sp, Su)

AUTO 163 Auto Body Independent Study
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. The completion of a written project report is required. (F, Sp, Su)

AUTO 204 Collision Repair Topics 4 Credit
Prerequisite: (AUTO 114 2.0 minimum or AUTO 143 2.0 minimum) and (AUTO 118 2.0 minimum or AUTO 145 2.0 minimum)
A study of various specific topics affecting collision repair and auto body restoration. Course format will include lectures, discussion, demonstration, and hands-on experiences. Specific topics vary by semester; check the semester schedule book for topics to be offered. (F, Su, Su)

AUTO 205 Collision Repair Topics 5 Credit
Prerequisite: (AUTO 114 2.0 minimum or AUTO 143 2.0 minimum) and (AUTO 118 2.0 minimum or AUTO 145 2.0 minimum)
A study of various specific topics affecting collision repair and auto body restoration. Course format will include lectures, discussion, demonstration, and hands-on experiences. Specific topics vary by semester; check the semester schedule book for topics to be offered. (F, Sp, Su)

AUTO 206 Collision Repair Topics 5 Credit
Prerequisite: (AUTO 114 2.0 minimum or AUTO 143 2.0 minimum) and (AUTO 118 2.0 minimum or AUTO 145 2.0 minimum)
A study of various specific topics affecting collision repair and auto body restoration. Course format will include lectures, discussion, demonstration, and hands-on experiences. Specific topics vary by semester; check the semester schedule book for topics to be offered. (F, Sp, Su)

AUTO 100 Auto Service I
Prerequisite: Reading Level 3 and Writing Level 2 and Math Level 3
This course is intended to provide the student with an extensive orientation to an automotive repair facility while developing tool and equipment usage skills needed to advance in the automotive repair field. (F, Sp, Su)

AUTO 102 Basic Car Care for the Novice
Prerequisite: None
This course is designed for the typical automobile owner who wants to gain a better understanding of the automobile and be able to make some basic repairs. It will encompass an overview of servicing needs and factors related to vehicle safety. Students will be able to inspect and adjust the vehicles, make informed decisions on purchasing vehicle products and services, and identify service items the owner might do themselves. (F, Sp)

AUTO 110 Auto Electrical Theory
Prerequisite: AUTO 100 2.0 minimum or Concurrently
This course covers basic electricity theory and how circuits work. Students will learn to access wiring diagrams, diagnose malfunctioning circuits in vehicles, and repair the malfunctions safely and according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)

AUTO 120 Auto Drive Train
Prerequisite: AUTO 100 2.0 minimum or Concurrently
This course covers manual transmissions/transaxles, differentials and four-wheel drive components. Students will learn to diagnose, disassemble, inspect and reassemble those components according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)

AUTO 121 Automatic Transmissions I
Prerequisite: AUTO 110 2.0 minimum or Concurrently
This course expands on knowledge obtained in AUTO 121. Topics include diagnosis, disassembly, inspection, and repair of automatic transmissions/transaxles according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)

AUTO 122 Automatic Transmissions II
Prerequisite: AUTO 121 2.0 minimum
This course expands on knowledge obtained in AUTO 121. Topics include diagnosis, disassembly, inspection, and repair of automatic transmissions/transaxles. Students will gain knowledge of those additional transmissions/transaxles in this class. All aspects of this course follow National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)

AUTO 130 Automotive Engines
Prerequisite: AUTO 110 2.0 minimum or Concurrently
This course covers the diagnosis, assembly and disassembly, specialized tools and measuring equipment, repair and rebuilding (removal and reinstallation of an automotive engine according to engine manufacturer standards and National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)

LANSING COMMUNITY COLLEGE 2003-2005
### AUTO 133 - Small Engine Repair

**Prerequisites:** None  
This course covers the theory of operation for "small engines" (lawn mowers, outboard motors, chain saws, and other engines up to 15 horsepower) to diagnose problems in operation, repair or overhaul defective components, and make engines operate according to manufacturer standards. (F, Sp, Su)

### AUTO 134 - Light Duty Diesel Engines

**Prerequisites:** None  
This course covers the operation of a light duty diesel engine, diagnosis and repair of mechanical and electronic fuel injection systems, air induction and exhaust system diagnostic repair, and general engine diagnostics according to the engine manufacturer standards. (F, Sp, Su)

### AUTO 140 - Automotive Brakes

**Prerequisites:** AUTO 110 2.0 minimum or Concurrently  
This course covers the diagnosis, service and repair of disc and drum standard anti-lock brake system problems according to National Automotive Technician Education Foundation (NATEF) and manufacturer standards. (F, Sp, Su)

### AUTO 150 - Auto Steering & Suspension

**Prerequisites:** AUTO 109 2.0 minimum or Concurrently  
This course covers automotive front and rear suspension systems, service and repair and align steering and suspension systems according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)

### AUTO 160 - Auto Heat & Air Conditioning

**Prerequisites:** AUTO 119 2.0 minimum or HERT 101 2.0 minimum  
This course covers the theory, diagnosis, recovery and recycling of Freon and the repair of automotive air conditioning systems according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp, Su)

### AUTO 190 - Automotive Special Topics

**Prerequisites:** None  
The Automotive Special Topics series will feature topics related to the automotive industry. The lectures will allow participants to explore a wide variety of topics that will range from State of Michigan Recertification and Alternative Fuels to Advanced Drivability Diagnosis. Specific topics vary each semester; check the semester schedule book for topics to be offered. (F, Sp, Su)

### AUTO 191 - Automotive Workshop Series

**Prerequisites:** None  
The Automotive Workshop Series will feature topics related to the automotive industry. The workshop format allows for hands-on participation in the particular topic area. Participants can explore topics from ABS Diagnosis to 4-Gas Analysis. Specific topics vary each semester; check the semester schedule book for topics to be offered. (F, Sp, Su)

### AUTO 192 - Automotive Workshop Series

**Prerequisites:** None  
The Automotive Workshop Series will feature topics related to the automotive industry. The workshop format allows for hands-on participation in the particular topic area. Participants can explore topics from ABS Diagnosis to 4-Gas Analysis. Specific topics vary each semester; check the semester schedule book for topics to be covered. (F, Sp, Su)

### AUTO 215 - Engine Performance/Tune-Up

**Prerequisites:** AUTO 130 2.0 minimum  
Students will obtain knowledge on ignition, fuel and emission systems, and will be introduced to computer controls. Topics include the diagnosis, removal, inspection, repair and reassembly of these systems. Students will diagnose, remove, inspect, repair and replace these systems according to National Automotive Technician Education Foundation (NATEF) standards. (F, Sp)

### AUTO 225 - Automotive Computers

**Prerequisites:** AUTO 215 2.0 minimum  
This course covers automotive engine computer systems, ignition systems, emission systems, exhaust gas treatment systems, air induction, exhaust gas recirculation and early fuel evaporation systems. Students will diagnose, remove, inspect, repair and replace these systems according to National Association for Technical Education Foundation (NATEF) standards. (F, Sp)

### AUTO 235 - Adv Computer/ABS Brake System

**Prerequisites:** AUTO 140 2.0 minimum and AUTO 225 2.0 minimum  
This course covers automotive anti-lock braking systems and advanced computer systems, including the theory and how these systems function. Students will learn to diagnose, disassemble, and repair these systems according to the standards of the National Automotive Technician Education Foundation. (F, Sp)

### AUTO 260 - Intro to Alternative Fuels

**Prerequisites:** AUTO 130 2.0 minimum and AUTO 225 2.0 minimum  
Students will use various sources in the alternative fueled vehicle industry to learn what alternative fuels are available. Students will closely examine the technologies involved when using compressed natural gas (CNG) as a fuel for vehicles. (F, Sp)

### AUTO 261 - Alternative Fuels - CNG

**Prerequisites:** AUTO 260 2.0 minimum  
This course is designed to help prepare the student to enter the auto repair and service industry. It is an intensive study covering the use of compressed natural gas (CNG) on automobiles and light trucks. Theory, application, installation, diagnosis and safety regulations pertaining to the use of CNG will be covered. (F, Sp)

### AUTO 262 - Alt Fuels-Propane (LPG)

**Prerequisites:** AUTO 260 2.0 minimum  
This course is an intensive study covering the use of propane as fuel for automobiles and light trucks. Theory, application, installation, diagnosis and safety regulations applicable to LPG vehicles will be covered. (F, Sp)

### AUTO 280 - Automotive Service Laboratory

**Prerequisites:** Department Approval  
This laboratory course is designed to provide work experience and develop trade-entry skills in general and light-line repair. (F, Sp)

### AUTO 285 - Automotive Internship

**Prerequisites:** Department Approval  
Students are able to earn credits while employed as a technician in auto mechanics or auto body. The program coordinator must approve the training station and working conditions. (F, Sp)

### AUTO 286 - Indep Study/Automotive

**Prerequisites:** Department Approval  
Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. A presentation or written report is required at the end of the project. (Su)

### AVAF - Aviation Airframe Maintenance

### AVAF 125 - Aircraft Systems I

**Prerequisites:** Department Approval  
The study of fuel management, transfer, defueling and fuel pump systems. The course covers the procedures used to inspect, check, service, troubleshoot and repair aircraft fuel systems and fuel system components. Course material emphasizes fuel quantity indicating, fuel pressure and warning systems. (Sp)

### AVAF 126 - Aircraft Systems II

**Prerequisites:** Department Approval  
The study, analysis and repair of aircraft landing gear and brake systems and their related warning systems. Includes the study, inspection, servicing and repair of aircraft hydraulic and pneumatic systems and their related components. (Sp)

### AVAF 127 - Aircraft Systems III

**Prerequisites:** Department Approval  
The course covers airframe related subjects necessary for an avionics technician. Topics include aircraft structure principles, installation procedures, material and fastener identification and antenna installation procedures. Students will work with sheet metal and composite structures. (F)

### AVAF 133 - Avionics Airframe Applications

**Prerequisites:** Department Approval  
The course covers airframe related subjects necessary for an avionics technician. Topics include aircraft structure principles, installation procedures, material and fastener identification and antenna installation procedures. Students will work with sheet metal and composite structures. (F)

### AVAF 134 - Aircraft Instruments

**Prerequisites:** Department Approval  
The course covers the inspection, checking, servicing, troubleshooting, repair of electronic flight instrument systems, both mechanical and electrical speed, altitude, temperature, pressure and flow instrument systems. Also, special removal and installation techniques applicable to aircraft instruments is included. (Su)
AVEL 200 Aircraft Structures I
Prerequisite: Department Approval
This course introduces the procedures for identification, inspection, testing and repairing of wood, fabric-covered and sheet metal aircraft. The installation and removal of conventional rivets, forming of aircraft sheet metal, installation of special rivets and fasteners, and an introduction to applying finishing materials will also be covered. (Sp)

AVEL 205 Aircraft Structures II
Prerequisite: Department Approval
Covers assembly and rigging of fixed wing and rotary wing aircraft control structures. Provides practical application in removal, installation and adjustment of flight control surfaces by balancing, cable tension and motion studies. Aircraft inspection procedures to ensure conformity with flight safety standards will be included. (F)

AVEL 210 Aircraft Structures III
Prerequisite: Department Approval
An advanced course covering inspection, repair, layout, bending and assembly of aircraft sheet metal, inspection, testing and repair of fiberglass, plastics, honeycomb, composite and laminated structures are practiced. Inspection and removal of special fasteners, bonded and composite structures and servicing of aircraft windows, doors and interior furnishings are included. (F, Sp)

AVEL 211 Aircraft Electrical I
Prerequisite: Department Approval
An intermediate aviation electrical course concentrating on theory, calculation and measurement of A.C. electrical systems. Includes reading and interpreting aircraft electrical circuit diagrams, including those with solid-state devices and logic functions. The installation, checking and servicing of airframe and engine wiring, controls, switches, indicators and protective devices are also covered. (Sp, Su)

AVEL 212 Aircraft Electrical II
Prerequisite: Department Approval
Repair of airframe and engine electrical system components with an emphasis on the inspection, checking, servicing and repair of alternating and direct current systems. General troubleshooting techniques are practiced with special emphasis on A.C. and D.C. electrical systems. (Su)

AVEL 246 National Airframe Cert Proced
Prerequisite: Department Approval
Study of the Federal Aviation Regulations pertaining to national certification as a licensed airframe mechanic. Includes testing in all required areas of study as a prerequisite to receiving authorization to take the national and airframe national certification test administered by representatives of the Federal Aviation Administration. (F)

AVEL - Aviation Electronics

AVEL 130 Avionics Installations
Prerequisite: None
This course includes familiarity with various types of wires and connectors used in the construction of aircraft wiring harnesses. The student will develop skills in soldering, aircraft wiring diagram reading, standard procedures and weight and balance calculation. (F)

AVEL 150 Avionics Test Equipment
Prerequisite: None
Co-requisite Course(s): AVEL 151
Covers the operational characteristics and operation of basic and specialized test equipment found in the aviation maintenance industry. Students will develop an understanding of maintenance manual organization for electronic test equipment and specialized aviation electronic equipment. Equipment coverage includes multimeters, oscilloscopes, power supplies, multifunction test generators, wattmeters, time domain reflectometers and spectrum analyzers. (Sp)

AVEL 151 Avionics Test Equipment Lab
Prerequisite: None
Co-requisite Course(s): AVEL 150
Subjects covered in AVEL 150 will be put to practical use in this laboratory. The student builds and calibrates his/her own digital voltmeter. The student will construct aircraft wiring harnesses and complete soldering exercises. Common electronic and specialized avionics test equipment are used in the lab. (Sp)

AVEL 190 Receiver Troubleshooting
Prerequisite: None
Co-requisite Course(s): AVEL 191
Familiarization with basic superheterodyne receiver principles and operation using block diagrams and component level theory. Various logical troubleshooting techniques are discussed. (Su)

AVEL 191 Receiver Troubleshooting Lab
Prerequisite: None
Co-requisite Course(s): AVEL 190
Familiarization with basic superheterodyne receiver principles and operation. Various logical troubleshooting techniques will be put to practical use in the laboratory. Students construct, align and troubleshoot an AM superheterodyne receiver. (Su)

AVEL 200 Flight Line Testing
Prerequisite: None
A study of the avionics systems found aboard modern aircraft focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADI, radar, autopilots and others. (F, Su)

AVEL 201 Flight Line Testing Lab
Prerequisite: None
A practical study of the electronics systems found aboard modern aircraft, focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADI, radar, autopilots and others. (F, Su)

AVEL 220 Avionics Systems I
Prerequisite: None
Co-requisite Course(s): AVEL 221
A study of the communications, navigation and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. Students will have the opportunity to obtain factory certifications for the repair of various systems. (F)

AVEL 221 Avionics Systems I Lab
Prerequisite: None
Co-requisite Course(s): AVEL 220
A hands-on study of the communications, navigation and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. (F)

AVEL 225 FCC License Preparation
Prerequisite: None
Federal Communication Commission rules and regulations are discussed as they pertain to the avionics technician. Elements 1 and 3 of the FCC General Radio-telephone Operator's License examination are presented to prepare the student for successful completion of the actual examination. (F)

AVEL 226 FAA Rules/Regs Avionics Tech
Prerequisite: None
This course covers various Federal Aviation Administration rules and regulations as they pertain to avionics shop operations and the avionics technician. (F)

AVEL 230 Avionics Systems II
Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum
Restriction: Avionics Majors
Co-requisite Course(s): AVEL 231
A study of navigation, microwave pulse equipment and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. Students will have the opportunity to obtain factory certification of the repair of various systems. (Sp)

AVEL 231 Avionics Systems II Lab
Prerequisite: AVEL 201 2.0 minimum
Restriction: Avionics Majors
Co-requisite Course(s): AVEL 230
A hands-on study of navigation, microwave pulse equipment and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. (Sp)

AVEL 297 Avionics Internship
Prerequisite: AVEL 151 2.0 minimum
Restriction: Avionics and Avionics Installation Majors
Minimum 120 hours per semester as an aviation electronics intern. Part-time occupational internship in avionics technology. The internships will be at certified repair stations as established by the Intern Coordinator. (Su)
AVEL 299 - Advanced Avionics Laboratory  
Prerequisite: AVEL 151 2.0 minimum  
Restriction: Avionics and Avionics Installation Majors  
Students will further develop troubleshooting and installation skills acquired in other courses. Students will work in an environment close to actual working conditions in most avionics repair stations. (Su)  

AVFT - Aviation Flight Training  

AVFT 201 Flight Training I  
Prerequisite: Department Approval  
Provides in-flight and ground training in a single-engine, non-complex aircraft, culminating in aeromedical knowledge, experience and skill in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp)  

AVFT 202 Flight Training II  
Prerequisite: Department Approval  
Provides in-flight and ground training in a single-engine, non-complex airplane; develops the student's instrument, night and cross-country flying skills. (F, Sp, Su)  

AVFT 203 Flight Training III  
Prerequisite: Department Approval  
Provides instruction in a complex, single-engine airplane; develops the student's skill at Instrument Flight Rules (IFR) navigation and Air Traffic Control (ATC) procedures in en route and terminal environments. (F, Sp, Su)  

AVFT 204 Flight Training IV  
Prerequisite: Department Approval  
Provides in-flight and ground instruction in a complex airplane; developing student skills in instrument Flight Rules (IFR) navigation and Air Traffic Control (ATC) procedures in an route and terminal environments. Students will develop skills at performing commercial proficiency flight maneuvers. Upon completion of this course, the student will take the practical test for commercial/instrument pilot airplane. (F, Sp, Su)  

AVFT 205 CFI Flight Training  
Prerequisite: Department Approval  
Provides in-flight and ground training in common primary training and complex airplanes. The student will develop instructional skills necessary to train pilots for certification in accordance with Federal Aviation Regulations. The student will take his/her practical test for Certified Flight Instructor Airplane upon completion. (F, Sp, Su)  

AVFT 206 Instrument Instructor Flight  
Prerequisite: Department Approval  
Provides in-flight and ground training in a non-complex aircraft. The student will develop instructional skills necessary to train pilots for the instrument rating. The student will take the practical test for the instrument flight instructor rating airplane upon completion of this course. (F, Sp, Su)  

AVFT 207 Multi-Engine Flight Training  
Prerequisite: Department Approval  
Provides in-flight and ground instruction in a multi-engine airplane. The student will take the multi-engine practical test upon completion of this course. (F, Sp, Su)  

AVFT 208 Multi-Engine Instructor Flight  
Prerequisite: Department Approval  
Provides in-flight and ground instruction in a multi-engine airplane. The student will develop instructional skills necessary to train students for the multi-engine practical test. The student will take the multi-engine instructor practical test upon completion of this course. (F, Sp, Su)  

AVFT 224 Tail Wheel Transition  
Prerequisite: Department Approval  
Provides students with skills and knowledge required to safely operate a tailwheel aircraft under various conditions. This course is designed for transitioning from operations in a tri-axial aircraft to those of a tailwheel aircraft. Upon completion of course objectives, individuals are issued tailwheel endorsements as per the Federal Aviation Regulations. (F, Sp, Su)  

AVGLE - Aviation General Maintenance  

AVGLE 111 Aviation General I  
Prerequisite: Department Approval  
This course is designed to develop the skills and knowledge required to maintain 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)  

AVGLE 112 Aviation General II  
Prerequisite: Department Approval  
Introduces the Federal Aviation Regulations involving the mechanic's privileges, limitations and related aviation operations. Includes the selection and use of aviation publications, maintenance forms, records, reports, aircraft drawings, graphs and charts, symbols, blueprints and system schematics. Also focuses on aircraft ground operations and servicing of related aircraft systems. (F, Sp)  

AVGLE 113 Aviation General III  
Prerequisite: Department Approval  
This initial aviation electrical course offers instruction in basic electrical theory and its aviation application. It includes the calculation and measurement of voltage, current resistance, continuity and power; and the theory, inspection and servicing of aircraft lead-acid and Ni-Ca batteries; and the construction of a volt-ohm meter. (F, Sp)  

AVGLE 114 Material and Processes  
Prerequisite: Department Approval  
This course covers identification and selection of the appropriate aviation hardware, hand tools, cleaning materials, fluid lines and nondestructive testing methods. Performance of nondestructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, installation and testing of fluid lines is included. (F, Sp)  

AVGS - Aviation Ground School  

AVGS 101 Private Pilot Ground School  
Prerequisite: None  
Recommended: SDEV 124  
This course prepares the student for successful completion of the Federal Aviation Administration private pilot written examination. The student will learn basic aerodynamic theory, principles of aircraft/powerplant operation and performance, Federal Aviation Regulations, air traffic control procedures, meteorology, navigation and flight physiology. (F, Sp, Su)  

AVGS 121 Aviation Meteorology  
Prerequisite: None  
Recommended: SDEV 124  
This course focuses on the application of meteorological theory to the practical aspects of flight planning. The student will understand basic concepts of weather systems, obtain weather briefings by using a personal computer, interpret domestic and international weather charts, forecasts and reports, (ICAO) and make appropriate "go/no go" decisions. (Sp)  

AVGS 211 Instrument Pilot Ground School  
Prerequisite: None  
Recommended: AVGS 121 and SDEV 124  
This course prepares the student for successful completion of the FAA instrument rating written examination. The student will learn operation and interpretation of the flight instruments, the use of an en route approach, SIDS and STAR charts for navigation, air traffic control procedures and meteorology as it applies to the instrument pilot. (F, Sp, Su)  

AVGS 221 Commercial Pilot Ground School  
Prerequisite: None  
Recommended: AVGS 121 and SDEV 124  
This course prepares the student for the successful completion of the FAA commercial pilot written examination. The student will develop knowledge of aerodynamic, 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  
Prerequisite: None  
Recommended: AVGS 121  
This course will prepare the student for the successful completion of the FAA Fundamentals of instruction and the Flight Instructor-Airplane and Advanced Ground Instructor written exams. The student will develop a flight training syllabus with lesson plans for use in training pilots. (Sp)
AVIR - Aviation Instrument Repair

AVIR 140  Aviation Instruments  2

Prerequisite: None

This course provides a basic knowledge of the principles of operation of aircraft instruments to include: operation, interpretation of indications, testing, proper handling, repair and calibration. Students will learn the proper use of pitot-static, digital anemometer and instrument repair and test equipment. (F)

AVPP - Aviation Powerplant Maintenance

AVPP 241 Reciprocating Engine  8

Prerequisite: Department Approval

This course provides the theory, testing, troubleshooting and repair of reciprocating engine cooling and exhaust systems. In addition, the inspection and repair of reciprocating engine cooling and exhaust systems are included. Also covers the inspection of piston, valve, piston rings and other engine components. (F, S, Sp)

AVPP 251 Reciprocating Engine Systems  2

Prerequisite: Department Approval

This course covers the operation, inspection, service, repair and troubleshooting of reciprocating engines. This course is intended to be taken concurrently with AVFT 251. (F, S, Sp)

AVPP 253 Reciprocating Ignition Systems  5

Prerequisite: Department Approval

This course covers the operation, inspection, service, repair and troubleshooting of reciprocating engine ignition systems and components. This includes magneto, igniter, ignition coils, spark plugs and starter systems. (F, S, Sp)

AVPP 255 Reciprocating Induction System  4

Prerequisite: Department Approval

This course covers the operation, analysis, service, repair and troubleshooting of reciprocating engine induction systems and components. This includes intake, exhaust, superchargers, turbochargers, and other engine fuel system components. (F, S, Sp)

AVPP 257 Aircraft Propeller Systems  4

Prerequisite: Department Approval

This course covers the operation, analysis, service, repair and troubleshooting of aircraft propellers, systems and components. This includes propeller balancing, pitch control, repair procedures and removal, and installation of both push-pull and variable-pitch propellers. (F, S, Sp)

AVPP 259 Turbine Engine I  4

Prerequisite: Department Approval

This course covers the theory of operation and design of the various turbine engines and turbine-driven auxiliary power unit systems, including the operation of these systems. (F, S, Sp)

AVPP 261 Turbine Engine II  4

Prerequisite: Department Approval

This course covers the operation and design of the various turbine engines and turbine-driven auxiliary power unit systems. This course includes the operation and design of the various turbine engines and turbine-driven auxiliary power unit systems. (F, S, Sp)

AVPP 263 Turbine Engine Systems  2

Prerequisite: Department Approval

This course covers the operation of the various turbine engine systems. This course includes the operation of the various turbine engine systems. (F, S, Sp)

AVPP 265 Powerplant Instruments  2

Prerequisite: Department Approval

This course covers the operation of the various turbine engine systems. This course includes the operation of the various turbine engine systems. (F, S, Sp)

AVPP 267 National Powerplant Cert Proc  1

Prerequisite: Department Approval

This course is designed to provide the student with the knowledge and skills necessary to pass the National Powerplant Certification Exam. This course includes the operation of the various turbine engine systems. (F, S, Sp)

AVPT - Aviation Powerplant Training

AVST 211 Flight Simulator I  1

Prerequisite: Department Approval

This course provides flight simulator training to develop student's skills and knowledge in flight simulation. This course is intended to be taken concurrently with AVFT 211. (F, S, Sp)

AVST 212 Flight Simulator II  1

Prerequisite: Department Approval

This course provides flight simulator training to develop student's skills and knowledge in flight simulation. This course is intended to be taken concurrently with AVFT 212. (F, S, Sp)

AVST 213 Flight Simulator III  1

Prerequisite: Department Approval

This course provides flight simulator training to develop student's skills and knowledge in flight simulation. This course is intended to be taken concurrently with AVFT 213. (F, S, Sp)

AVST 214 Flight Simulator IV  1

Prerequisite: Department Approval

This course provides flight simulator training to develop student's skills and knowledge in flight simulation. This course is intended to be taken concurrently with AVFT 214. (F, S, Sp)

AVST 215 Multi-Engine Flight Simulator  1

Prerequisite: Department Approval

This course provides flight simulator training to develop student's skills and knowledge in flight simulation. This course is intended to be taken concurrently with AVFT 215. (F, S, Sp)

BDCS - Business Development Seminars

BDCS 201 Starting a Business  5

Prerequisite: None

This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. (F, S, Sp)

BDCS 202 Success Strategies Oper Sm Bus  5

Prerequisite: None

This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. (F, S, Sp)

BDCS 205 Recordkeeping with QuickBooks  5

Prerequisite: None

This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. (F, S, Sp)

BDCS 209 Finan Mgmt for Sm Business  5

Prerequisite: None

This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. This seminar is designed to provide the student with the knowledge and skills necessary to start and operate a successful business. (F, S, Sp)
BDCS 210 Customer Relations
Prerequisite: None
Anyone who sells, greets, or provides services to customers can discover new ways for creating good customer relations. By communicating effectively, understanding customer personalities and how to deal with them, and assessing their own motivation and esteem needs, participants can serve their customers in a positive manner. (F, Sp, Su)

BDCS 211 Advertising for Small Business
Prerequisite: None
This seminar will teach how to plan, create, select, and evaluate advertising. Entrepreneurs can learn to develop an advertising plan that is unique to the special needs of their organizations. (F, Sp, Su)

BDCS 215 Developing a Marketing Plan
Prerequisite: None
This seminar familiarizes participants with marketing and provides an opportunity to write a marketing plan. Participants will learn to use a six-step process that involves obtaining data, developing the plan, and analyzing the results. (F, Sp, Su)

BDCS 225 Writing a Business Plan
Prerequisite: None
Participants can expect to become familiar with business planning and how to develop and maintain a business plan. Most creditors require a business plan before reviewing a loan application. Be prepared. Write your business plan with the information provided at this seminar. (F, Sp, Su)

BDCS 230 Small Business Taxes
Prerequisite: None
Federal, state, and local governments assess a variety of taxes on business. This seminar will identify the various taxes which pertain to small businesses in Michigan and provide information on the tax rates used and filing responsibilities of the businesses. (F, Sp, Su)

BIOL - Biology

BIOL 120 Environmental Science
Prerequisite: Reading Level 5 and Writing Level 6
Students will develop an ecological knowledge base to allow them to understand how human actions impact the environment. They will develop applied analytical skills through laboratories, fieldwork, simulations and a discussion of contemporary issues. They will investigate and evaluate basic ecological and environmental issues. (F, Sp, Su)

BIOL 121 Bio Foundation for Physiology
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: CHEM 120 or High School Chemistry
Topics include atomic structure, chemical bonding, organic molecules, biological molecules, enzymes, metabolism, cell structure and function, passage of materials across membranes, harvesting energy, mitosis, meiosis, and the relationship between DNA, RNA, and protein synthesis. Designed for students preparing for health careers. Recommended prerequisites for BIOL 202. (F, Sp, Su)

BIOL 127 Cell Biology
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: CHEM 120 or CHEM 125 or High School Chemistry
Lecture topics include chemistry of carbohydrates, lipids and proteins; structure and function of lipids and proteins; cell biology; reproduction and cellular division. Laboratory exercises involve cell structure and function as well as techniques for cell biology. (F, Sp, Su)

BIOL 129 Organismal Biology
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
This course examines adaptations of organisms to changing environments. Major emphasis is on physiological adaptations, natural selection, ethology, and ecology. Aquatic systems are examined in the laboratory; sampling techniques and statistical methods are used to analyze a local river. (F, Sp, Su)

BIOL 145 Introductory Anat & Physiology
Prerequisite: Reading Level 5 and Writing Level 6
An introductory course in human anatomy and physiology which combines lecture and laboratory experiences to provide a basic understanding of the structure and function of body systems. Designed for vocational programs, that include emergency medical technicians, massage therapists, medical technicians, and medical transcriptionists, as well as for non-science majors. (F, Sp, Su)

BIOL 201 Human Anatomy
Prerequisite: Reading Level 5 and Writing Level 5 and Math Level 4
Recommended: BIOL 121 or BIOL 127 and Chemistry
A study of the anatomy of the human body that includes the structures of the skeletal, muscular, nervous, sensory, circulatory, respiratory, digestive, excretory, endocrine, and reproductive systems. Designed for students preparing for health occupations such as nursing, radiologic technology, and dental hygiene. (F, Sp, Su)

BIOL 202 Human Physiology
Prerequisite: BIOL 201.2 minimum (previously BIOL 201) and Reading Level 5 and Writing Level 6 and Math Level 5
Recommended: BIOL 121 and Chemistry
The physiology, regulation, biochemistry, and integration of various organ systems in the human body are presented. Emphasis is on normal function, but appropriate clinical aspects may be discussed. Laboratory topics complement the lecture. Designed for students preparing for health occupations such as nursing, radiologic technology and dental hygiene. (F, Sp, Su)

BIOL 203 Microbiology
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: BIOL 121 or BIOL 127 and Chemistry
An introduction to bacteria, viruses, and other microorganisms as they relate to human health. Emphasis on bacterial and viral structure, life cycles, and genetics; antimicrobial therapy; immunology and host defenses; epidemiology; treatment, and prevention of infectious human diseases. Designed for health career and other science students. (F, Sp, Su)

BIOL 204 Microbiology Laboratory
Prerequisite: BIOL 203.2 minimum or Concurrently (previously BIOL 203)
Basic laboratory principles of microbiology for allied health students. Emphasis on microscopy, aseptic cultivation of microorganisms, differential staining, assay of antimicrobial agents, and diagnostic laboratory techniques. Students will identify unknown bacterial species and examine medically important parasites. (F, Sp, Su)

BIOL 210 Natural Resource Conservation
Prerequisite: Reading Level 5 and Writing Level 6 and Math 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, Sp, Su)

BIOL 229 Nature Study for Educators
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: ESCI 122
A general biology course for educators and education majors on integrated understanding of the natural world, including the basic and abiotic components comprising these typical midwestern environmental communities: an aquatic, a terrestrial, and a field community. (F)

BIOL 250 Botany
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: One semester of College-level Biology
An introduction to the study of plants that includes structure and function, development, and ecology. Emphasis will be placed on the diversity, adaptations, and life cycles of major plant groups. Laboratory will complement the basic concepts with emphasis on physiology, systematics, and species of value to medicine and agriculture. (F)

BIOL 255 Zoology
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: One semester of College-Level Biology
Topics include principles of taxonomy; early animal development, and comparative anatomy of members within the animal phyla and classes. Groups are surveyed in a phylogenetic approach. (Sp)

BIOL 270 Human Genetics
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 5
Recommended: BIOL 121 or Equivalent and Chemistry
Presents general principles of genetics with specific human application. Topics include Mendelian genetics, mitosis and meiosis, chromosome structure and aberrations, sex determination and sex linkage, molecular basis of inheritance, gene mutations, genetics of immune system, cancer genetics, recombinant DNA technology, and genetic screening and counseling. (Sp)
BIL 275  Molecular Biology I  4
Prerequisite: BIOL 127, 2.0 minimum and CHEM 151, 2.0 minimum and CHEM 151, 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4
Molecular biology represents the central dogma of modern biology. The course will develop a solid understanding of cellular biology, focusing on understanding the system operation at the genetic, chemical, structural, and functional levels. The emphasis will be on the interpretation of results of laboratory experiments. (F)

BIL 276  Molecular Biology II  4
Prerequisite: BIOL 275, 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4
Continuation of BIL 275. Advanced lecture topics in bacteriophage biology and genetics, gene analysis, gene sequencing, and applications of molecular biology in biochemistry. Genetic manipulation experiments with lambda phages and plasmids. Use of molecular biology tools for the cloning of gene libraries. (F)

BIL 285  Biology in the Tropics  2
Prerequisite: Reading Level 5 and Writing Level 5 and Math Level 4
An experience into tropical ecosystems in Costa Rica. An eight-week lecture series on tropical biology will culminate with a ten-day visit to a biological reserve in Costa Rica. Individual writing projects emphasizing evolutionary and ecological concepts will be conducted in the field. (Sp)

BIL 287  Tropical Aquatic Systems  3
Prerequisite: Reading Level 5 and Writing Level 5 and Math Level 4
Recommended: College level biology or chemistry
This course combines a laboratory lecture series with a 10-day field study in Puerto Rico. Students will study tropical aquatic systems including forested streams, tidal pools, urban waterways, and coral reefs. Evaluation will be based on lecture tests, journals, and the development and completion of individual research projects. (F)

BLD 110  Building Related  1.5
Prerequisite: None
Recommended: Previous Woodworking Experience
This class is designed to offer students a shop in which to work on individual woodworking projects. All of the tools and equipment in the shop are available for student use. The instruction demonstrates uses of tools/equipment and consults with students on their individual projects. (F, Sp)

BLD 112  Wood Projects Lab  0.75
Prerequisite: None
Recommended: Previous Woodworking Experience
This class is designed to offer students the opportunity to work on their own woodworking projects. All of the tools and equipment in the shop are available for student use. The instructor is available to help with the use of tools and to assist with their projects. (Su)

BLD 144  Build Your Own Home  1.5
Prerequisite: None
This course is designed for students who wish to build their own homes. Includes an overview of materials and construction, choosing contractors, scheduling of work, financing, and landscaping. Guest speakers, who are experts in their various fields, provide the instruction. (F, Sp, Su)

BLD 100  Introduction to Construction  3
Prerequisite: None
This course covers basic concepts of construction, including city and regional planning, managing, contracting, designing, engineering, estimating, bidding, and inspecting, as well as the production work normally associated with construction. (F)

BLD 101  Basic Woodworking  2
Prerequisite: None
Students learn about wood characteristics, hand and portable power tools, woodworking machinery, joint construction, fastening methods, woodworking techniques and procedures, and technical information to be applied to student- made projects. (F, Sp)

BLD 163  Structural Blueprint Reading  4
Prerequisite: None
This course covers symbols, conventions and abbreviations used in structural blueprints. The student will be able to recognize conventions and verbally describe their interpretation in trade or lay terms according to standard architectural practices. Residential and commercial designs are used to show the relationship between working drawings and specifications. (F, Sp, Su)

BLD 121  Residential Framing  4
Prerequisite: None
Students will learn to frame residential buildings using accepted framing techniques, such as framing member spacing, framing floor systems, interior and exterior walls, ceilings, roofs and stairs. Various types of foundations and the advantages and disadvantages of each are covered. Hands-on methods are used. (F, Sp)

BLD 124  Remodeling, Shingling/Siding  4
Prerequisite: BLD 121, 1.0 minimum or Concurrently
Students will learn to remodel, shingle and side a residential building. This course covers the analysis, designing, estimating, problem solving, building practices, materials and installation methods for remodeling, roofing and exterior wall covering projects. (Sp)

BLD 125  Interior Carpentry  4
Prerequisite: BLD 121, 1.0 minimum or Concurrently
Students will learn to finish the interior of a residential building. This course covers the materials, installation practices and calculations needed to do the finish carpentry for a house to include windows, doors, base, chair rail, wood flooring, stairs, simple built-ins and cabinets. (F)

BLD 132  General Home Maintenance  2
Prerequisite: None
This is an introductory course in general home maintenance. Areas to be covered include basic tools, electrical, plumbing, framing, roofing, interior trim, drywall and painting, appliance maintenance and repair, and concrete finishing and siding. (F, Sp)

BLD 252  Builder's Business License  4
Prerequisite: None
This course covers the principles of residential builder organizations and business practices, along with other useful information to help students pass the State of Michigan Builder's License Exam. Preparation for a residential project from planning to actual construction and sale of the project is covered. (Sp)

BLD 277  Construction Cost Estimating  4
Prerequisite: BLD 103, 1.0 minimum or ARCH 101, 1.0 minimum or Concurrently
Students will learn to do a structural material takeoff and a complete estimate for residential and light commercial buildings. The course uses standard estimating practices to estimate the cost of buildings based on detailed blueprints. (F)

BLD 281  MI Residential & Bldg Codes  3
Prerequisite: None
Students will be introduced to the Michigan Residential Code and the Michigan Building Code. This course will emphasize the interpretation and application of the Michigan Residential Code and the Michigan Building Code. Requirements for materials, barrier-free design and fire standards for residential and commercial construction will also be emphasized. (F, Sp)

BLD 295  Residential Building Intern  2
Prerequisite: BLD 121, 1.0 minimum and Department Approval
Restriction: Residential Building Majors
This course offers students the opportunity to work for a residential builder in an actual job situation. The students can gain experience working with tools used in the industry and applying what they learned in the classroom and laboratory. (F, Sp, Su)

BLD 296  Ceramic Tile Seminar  5
Prerequisite: None
This seminar will teach the basic principles for installation of ceramic tile. This includes the selection of types of tile, how to lay out the tile, preparation of the surface, care of tools used, and estimation of labor and materials. (F, Sp)
BUSN 118 Introduction to Business
Prerequisite: Reading Level 5
Introduces students to principles, problems, and practices related to the world of business. Topics covered include business management and organization, marketing, finance, economics, production, and international business. (F, Sp, Su)

BUSN 191 Independent Study/Business
Prerequisite: Department Approval
Students are allowed to undertake special research projects and/or individual readings to apply personal and professional experience to academic area of interest. Minimum of 16 hours work per credit required, plus completion of written project report. (F, Sp, Su)

BUSN 201 International Business
Prerequisite: None
Recommended: BUSN 118
Overview of international business: organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import quotas and export controls, balance of payments, and free trade versus protectionism. (F, Sp, Su)

BUSN 250 Personal Finance
Prerequisite: None
Provides a broad survey of topics including budgeting, smart shopping, buying a car, renting, buying or selling a home, credit requirements, investing, insurance, and estates and retirement planning. Not intended to be a financial planning course, but students will develop a fundamental knowledge of financial concerns. (F, Sp)

BUSN 251 Stock Market Essentials
Prerequisite: None
Study of securities market to give framework with which to set investment goals and achieve desired results. Introduction to some of the more prevalent theories, concepts, and skills to aid in developing strategies and making sound investment decisions related to the stock market. (F, Sp)

BUSN 254 Introduction to Investments
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 205 Small Business Management
Prerequisite: None
Small business operators, including business and managerial functions, principles of management, environment of small business, financial, marketing, production, management, and legal and governmental relationships. Development of a small business plan is required. (F, Sp)

CABS 100 Computer Related Seminars
Prerequisite: None
This series of seminars provides the successful participant with operational proficiency in using specific microcomputer software. The seminars also provide the students with some experience using commands, functions, and features of the software beyond the basic level. Extensive hands-on activity is the primary method used in learning. (F, Sp, Su)

CABS 101 Begin Keyboarding on Computer
Prerequisite: None
Recommended: Reading Level 5 and Writing Level 4
This course is designed for students having no previous typing experience. Basic keyboarding skills using the touch method are developed. Emphasis is on correct finger usage, developing speed and accuracy using the alphabet, keyboard, number, and symbol keys. Basic speed level of 30-60 is developed. (F, Sp, Su)

CABS 102 Microcomputers for Non-Majors
Prerequisite: None
Surveys concepts and uses of software applications: word processors, spreadsheets, and database managers. Terminology, problem solving, and acquisition factors associated with personal computers are discussed. Hands-on computer use. (F, Sp, Su)

CABS 103 Internet Basics for Non-Majors
Prerequisite: None
Recommended: Windows Familiarity and Reading Level 3 and Writing Level 4
Designed to explore the potential uses of the Internet, students will complete hands-on, skill-based assignments and gain extensive experience utilizing Blackboard to access and turn in their course work. Students will develop literacy with internal tools including e-mail, search engines, modifying and posting a web page template, and other applications. The course also discusses the rapidly changing world of the Internet including current software, trends, and societal issues. (F, Sp, Su)

CABS 104 Keyboarding Improvement
Prerequisite: None
Recommended: Previous Keyboarding and Reading Level 5 and Writing Level 4
This course is designed to develop speed and accuracy at the keyboard. Students need to know the alphabet key locations prior to taking this class. A net speed of 25 words per minute on a three-minute timing is recommended. (F, Sp, Su)

CABS 106 Microsoft Windows Experience
Prerequisite: None
This course introduces students to basic features of the Microsoft Windows operating system. Topics include using the Windows Desktop, menus, toolbars, and managing files. It is designed for the novice computer user desiring Windows experience to prepare for MS Office courses, and for students planning to complete the Information Technology Job Readiness certificate. (F, Sp)

CABS 110 Intro to Microsoft Office
Prerequisite: None
Recommended: Windows and Keyboard Experience and Reading Level 5
This course provides an introduction to MS Office. It is designed to develop basic operational proficiency while using MS Office (MS Word, MS Excel, MS Access, and MS PowerPoint). Students learn how to use word processing, spreadsheet, database, and presentation software. Topics include creating letters, memos, simple spreadsheets, database structures, and desktop presentations. (F, Sp, Su)

CABS 119 Microsoft Word
Prerequisite: None
Recommended: Windows and Keyboard Experience and Reading Level 5 and Writing Level 6
This course is designed to provide the person new to the Word for Windows program with the ability to perform the most common word processing functions. The course also covers less frequently used features, such as creating tables and outlines. This course includes the exam that leads to Microsoft Office Specialist Word Core certification. (F, Sp, Su)

CABS 126 Excel
Prerequisite: Reading Level 5
Recommended: Windows and Keyboard Experience
Beginner-level training in the creating of spreadsheets and databases using the Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. Also included is instruction in file handling, disk management, and macro creation and use. This course includes the exam that leads to Microsoft Office Specialist Excel Core certification. (F, Sp, Su)

CABS 129 Excel-Advanced
Prerequisite: CABS 126 2.0 minimum
Advanced-level training in the creating of spreadsheets and databases using the Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. This course includes the exam that leads to Microsoft Specialist Excel Expert certification. (F, Sp, Su)

CABS 133 Microsoft Access Database
Prerequisite: None
Recommended: Windows and Keyboard Experience and Reading Level 5
This course provides introductory through intermediate level training in the creation of database management systems using Microsoft Access. Instruction includes an introduction to Microsoft Access, database creation and maintenance, database querying, the generation of custom forms and reports, and integration of Access with other programs. This course includes the exam that leads to Microsoft Office Specialist Access Core certification. (F, Sp, Su)
CABS 195 Microsoft Windows
Prerequisite: None
Recommended: Reading Level 5
This course is designed to provide students with a broad base of knowledge that is necessary for enhancing PC productivity through the efficient and effective utilization of Microsoft Windows for file, application, and system use and management. It serves as an excellent introduction to the operating system. Topics include the use of Windows Interface Objects, Utilities, Help features, Multimedia features, Internet features, closely related applications, and Apps (Windows XP). (F, Sp, Su)

CABS 205 Using Project Mgmt Software
Prerequisite: None
Recommended: Windows Familiarity and Reading Level 5
Students will learn project management skills utilizing Windows-based project management software. Students work through all phases of setting up a project using a case study that runs through the entire course. (F, Sp)

CABS 210 Advanced Microsoft Office
Prerequisite: CABS 110 2.0 minimum
A sequel to CABS 110, this course provides advanced instruction in Microsoft Office Professional. Designed to develop advanced skills using MS Word, MS Excel, MS Access, and MS PowerPoint. This class uses extensive hands-on activity. (F, Sp)

CABS 219 Advanced Microsoft Word
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: CABS 119
Advanced-level training in word processing using the Microsoft Word program. The instruction includes footnotes, tables, using and defining styles, using graphics, creating forms, and advanced font and text formatting. This course includes the exam that leads to Microsoft Office Specialist Word Expert certification. (F, Sp, Su)

CABS 222 Advanced Microsoft Access
Prerequisite: CABS 133 2.0 minimum and Reading Level 5
Recommended: CABS 155 or Equivalent
This course provides advanced level training in the creation of database management systems using Microsoft Access. Instruction includes working with web-enabled information, advanced custom forms and reports, advanced queries, advanced relationships, macros, switchboards, and introductions to the use of SQL and Visual Basic for Applications Code within Access. (F, Sp)

CABS 234 Programming Microsoft Access
Prerequisite: CABS 232 2.0 minimum and (CIS 114 2.0 minimum or CIS 119 2.0 minimum)
Advanced level database management for the Access user who already has a knowledge of databases and the basic objects of an Access database such as tables, queries, forms and reports, but now wants to learn how to program with Visual Basic for Applications to expand application with a professional and intelligent interface. This course is designed for advanced users of Microsoft Access who are interested in using Visual Basic for Applications to program intelligent Visual interface objects and automate database processes. (F, Sp)
CHCE 227

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CHCE - Continuing Health Careers

CHCE 100  Nurse Refresher
Prerequisite: Department Approval
This course provides continuing education for licensed RNs or LPNs. It is a general review of critical thinking and clinical decision-making. It is designed for licensed RNs or LPNs. (F, Sp)

CHCE 105  Cardiac Dysrhythmia Interpretation
Prerequisite: None
This course introduces students to the identification and treatment of common dysrhythmias seen on the monitor or telemetry unit. Content will include assessment, treatment, and critical thinking skills. (F, Sp)

CHCE 114  Prep Asess Skill (Nrs Pro Vic)
Prerequisite: None
This course provides continuing education for licensed RNs or LPNs. It is a general review of critical thinking and clinical decision-making. It is designed for licensed RNs or LPNs. (F, Sp)

CHCE 115  Physical Assessment Refresher
Prerequisite: None
This course is designed for students who have already had formal training in physical assessment skills. Course content is designed to help students maintain their skills and to improve the quality of their care. (F, Sp)

CHCE 185  Lab Tests for Nurses
Prerequisite: None
This course is designed for licensed RNs or LPNs. It is a general review of critical thinking and clinical decision-making. It is designed for licensed RNs or LPNs. (F, Sp)

CHCE 210  PALS Training
Prerequisite: Department Approval
This course is designed for members of the health care team who work with pediatric patients. It is a general review of critical thinking and clinical decision-making. It is designed for licensed RNs or LPNs. (F, Sp)

CHCE 211  PALS Refresher
Prerequisite: Department Approval
This course is designed for members of the health care team who work with pediatric patients. It is a general review of critical thinking and clinical decision-making. It is designed for licensed RNs or LPNs. (F, Sp)

CHCE 215  Massage Therapy Seminars
Prerequisite: None
This course provides continuing education seminars for health professionals such as massage therapists and bodyworkers. Specific up-to-date topics will vary with each seminar and will be related to massage and bodywork techniques. (F, Sp, Su)

CHCE 225  Surg Tech & OR Seminars
Prerequisite: None
This course provides continuing education seminars for health professionals such as surgical technologists and operating room nurses. Specific up-to-date topics will vary with each seminar and will be related to surgical and bodywork techniques. (F, Sp, Su)

CHCE 227  Health Related Seminars
Prerequisite: None
This course is designed for students who have already had formal training in health assessment skills. Course content is designed to help students maintain their skills and to improve the quality of their care. (F, Sp, Su)
CHCE 230  ACLS Training Seminar
Prerequisite: Department Approval
This seminar is designed for members of the health care team to develop knowledge and skills in Advanced Cardiac Life Support (ACLS). A combination of lecture and skills performance will prepare the student to achieve success in American Heart Association certification as an ACLS provider. Prior assigned reading mandatory. Participants must have a current provider card for CFR (F, Sp, Su)

CHCE 235  ACLS Refresher
Prerequisite: Department Approval
This seminar is designed to recertify, according to the American Heart Association standards, those individuals currently possessing valid Advanced Cardiac Life Support (ACLS) and current CFR provider cards. The American Heart Association will issue a certificate to each student upon successful completion of the program. Prior assigned readings are mandatory. (F, Sp, Su)

CHCE 299  ACLS Instructor Seminar
Prerequisite: None
This course will train those health care professionals who are currently certified in Advanced Cardiac Life Support (ACLS), according to American Heart Association standards, as ACLS instructors. All participants are expected to recently their ACLS skills at the time of the course. Prior assigned readings are mandatory. (F, Sp, Su)

CHDV - Child Development

CHDV 101  Child Growth/Dev: 0-5 Years
Prerequisite: Reading Level 5 and Writing Level 4
This course examines the growth and development patterns of children (pre-natal to five years) in physical, social, emotional, cognitive, and language development. 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  Child Guidance/Communication
Prerequisite: Reading Level 3 and Writing Level 4
This course, which includes field work, examines interaction skills and environmental structures which foster social and emotional growth in children. Topics include positive guidance and discipline, effective communication with children, problem solving, social skill development, group management, and aggression prevention. CDA functional areas; learning environment, self, social, guidance, communication, professionalism. (F, Sp)

CHDV 112  Family Relationship/Child Care
Prerequisite: CHDV 111 2.5 minimum
This course examines ways to establish and maintain positive and supportive relationships with families in child care programs. Topics include understanding the parent's perspective, supporting the child's relationship with the or her family, encouraging parental involvement, and communicating with parents. CDA functional areas: families. (F, Sp)

CHDV 113  Health/Safety Issue:Child Care
Prerequisite: None
This course examines health and safety issues in child care homes and centers. Topics include understanding and preventing communicable illnesses, bloodborne pathogens, safe equipment and play areas, preventing accidents, nutrition, and health and safety education. It addresses the CDA competencies of safe and healthy. (F, Sp)

CHDV 120  Curriculum: Physical Dev
Prerequisite: None
This course explores curriculum and activities which enhance the development of physical and motor skills of children in early childhood programs. It includes specific information on developmentally appropriate activities for fine motor, gross motor, and sensory development for a variety of ages. CDA functional areas: physical. Uses seminar format. (F)

CHDV 121  Curriculum: Cognitive/Lang
Prerequisite: None
This course examines curriculum and activities which enhance cognitive and language development of children in early childhood programs. Students explore classroom materials to develop effective teaching techniques. CDA functional areas: cognitive and communication. Uses seminar format. (Su)

CHDV 122  Curriculum: Creative Dev
Prerequisite: None
This course examines curriculum and activities which enhance the creative development of children in early childhood programs. Specific information on activities in the areas of art, music, creative, and dramatic play with a variety of materials are shared. Uses seminar format. (Sp)

CHDV 123  Curriculum:Early Child Literacy
Prerequisite: None
This course examines curriculum and activities which enhance the development of literacy in early childhood programs. The focus is on designing and implementing developmentally appropriate strategies, environments, and activities that promote the acquisition of basic concepts about literacy and its functions for children five years of age and under. Topics include: oral language, emergent reading, emergent writing, classroom arrangement. (F, Su)

CHDV 124  Curriculum:Early Math Developm
Prerequisite: None
Recommended: Experience in Early Childhood Education and Care
This course examines curriculum and activities which enhance the interest in, and development of, math skills, concepts and awareness in early childhood programs. The focus is on designing and implementing developmentally appropriate strategies, environments, and activities that promote the acquisition of basic concepts about math to include number, measurement, shape, data and analysis, problem solving, and patterns. Seminar format is used. (Sp)

CHDV 130  Introduction to Child Care
Prerequisite: None
This course introduces factors in providing quality child care. Topics include the following areas: curriculum development, growth and development, positive guidance and discipline skills; safety, health and nutrition; parent communication and involvement; and professionalism. CDA functional areas: learning environment, program management, and professionalism. (Sp)

CHDV 131  Family Child Care Management
Prerequisite: None
Recommended: Experience in Early Childhood Program
This course presents a systematic approach to managing a family child care home and creating a positive learning environment for young children in a home setting. Topics include business aspects, program development, professionalism, managing personnel, and organizing the environment. CDA functional areas: learning environment, program management, professionalism. (F)

CHDV 181  Adult Communication/Child Care
Prerequisite: None
Recommended: Experience in Early Childhood Program
This course examines effective adult-adult communication (both staff-staff and staff-parent) in early childhood and adult programs. Topics include personal communication style, challenging situations, and effective strategies to improve communication, problem-solving and team building. Seminar format is used. (Sp)

CHDV 184  Children and Stress
Prerequisite: None
This course examines stress as it relates to children. Specific topics include symptoms and causes of stress, situations which are stressful for children, ways to help children cope with stress, and techniques for reducing stress. Specific information on divorce, death, family violence, and hospitalization are discussed. Seminar format is used. (Sp, Su)

CHDV 195  Preventing Child Sexual Abuse
Prerequisite: None
This course explores preventing child sexual abuse through teaching personal safety to children. Topics include the sexually abusive situation, behavioral indicators, appropriate adult responses, legal mandates, and reporting protocol. It emphasizes appropriate ways of teaching personal safety to children, selecting personal safety materials, and adult concerns when teaching it. Seminar format is used. (F)

CHDV 196  Child Self-Esteem/Psych Discipl
Prerequisite: None
This course looks at children's self-esteem: what it is, where it comes from, and how it can be fostered in both homes and child care. It focuses on practical suggestions and teaches positive discipline techniques that build self-esteem. CDA functional area: self, guidance. Seminar format is used. (F, Sp, Su)

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CHDV 188 Caring Children/Special Needs

Prerequisite: None
This course focuses on the special and diverse individual needs of children and their families, including handicapping conditions in various settings. It addresses identification of children with disabilities or in "at-risk" categories; community services; inclusion in least restrictive environments; family-centered intervention; and communication skills which enhance work with children with special needs and their families in various settings. (Sp)

CHDV 189 Help Children Value Diversity

Prerequisite: None
This course explores how early childhood and care programs can promote diversity and encourage tolerance through engaging similarities and differences. Topics include identity formation, bias, cultural awareness, and integrating diversity into the classroom and curriculum. Seminar format is used. (F, Su)

CHDV 190 Child Care Seminar

Prerequisite: None
This course provides a variety of topics of special interest to child care providers. (F, Sp)

CHDV 197 Child Development Special Topics

Prerequisite: None
This course explores recently identified current issues, knowledge, skills and/or attitudes in the field of early childhood education and care. (F, Sp)

CHDV 198 Child Development Special Topics

Prerequisite: None
This course explores recently identified current issues, knowledge, skills and/or attitudes in the field of early childhood education and care. (F, Sp)

CHDV 220 Preschool Curriculum/Learning Env

Prerequisite: CHDV 101 2.0 minimum and CHDV 111 2.5 minimum
This course, with field work, explores developmentally appropriate preschool programming which promotes physical, cognitive, language, and creative development. Emphasis is on active involvement of children in concrete experiences. Other topics include learning environments, materials, and equipment, and learning objectives. CDA functional areas: learning environment, creative, physical, cognitive, communication, and program management. (F, Sp)

CHDV 221 Infant-Toddler Program Dev

Prerequisite: CHDV 101 2.0 minimum or Concurrently
This course, which includes field work, explores physical and emotional environments needed for quality child care for infants and toddlers. Focus includes developing nurturing skills, developmentally appropriate activities and materials, managing schedules and routines, observation, and record keeping skills. CDA functional areas: safe, healthy, learning environment; physical, cognitive, communication; program management. (F, Su)

CHDV 222 School-Age Child Care Prog Dev

Prerequisite: None
This course examines the development of child care programs to meet the developmental characteristics of school-aged children (age 5-12). Content includes growth and development patterns in the areas of physical, cognitive, social and emotional; appropriate equipment and activities; environment and program structure; and individual and group management. (F, Sp, Su)

CHDV 230 Early Childhood Center Admin

Prerequisite: CHDV 220 2.5 minimum
This course examines the administrator's role in directing an early childhood center and in providing a systematic approach to program management. Topics include goal-setting, safety, licensing, health, nutrition, policy development, business techniques, and personnel management. CDA functional areas: safe, program management, professionalism. (Sp)

CHDV 251 CDA Credentialing Preparation

Prerequisite: CHDV 111 2.2 minimum and (CHDV 220 2.5 minimum or CHDV 221 2.0 minimum) and Department Approval
Recommended: Employed or volunteer 1-4 hrs/week in approved regulated child care program
This course, and accompanying field work, examines credentialing procedures and competency standards for the Child Development Associate (CDA) Credentialing Assessment. Students complete the resource file, are observed using the CDA observation instrument, and prepare for the CDA situational assessment. Content of the course covers the functional area of families and professionalism. (F, Sp)

CHDV 252 CDA Completion

Prerequisite: CHDV 112 2.0 minimum and CHDV 220 2.5 minimum and (CHDV 284 2.0 minimum or Concurrently) and Department Approval
This course is designed for associate degree candidates and allows them to complete the CDA assessment readiness requirements as part of the associate degree program. Resource file development, statements of competence, observation, and assessment procedures are included. Taken concurrently with CHDV 254. (Sp)

CHDV 284 Child Development Practicum

Prerequisite: CHDV 220 2.5 minimum and Reading Level 5 and Writing Level 6 and Department Approval
A supervised field experience working directly with children in a child care program. Students gain skill in planning and implementing the daily children's program, and in writing and assessing goals for individual children and the classroom. Accompanying seminar explores the teacher's professional role in planning, goal-setting, and evaluation. (Sp)

CHDV 297 Child Development Indep Study

Prerequisite: Department Approval
This course includes special research, directed study, or service-learning projects in child development. It requires at least 16 hours of independent work for each credit. A learning contract specifying objectives, activities, and outcomes is required. (F, Sp, Su)

CHEM 120 Gen Organic & Biological Chem

Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
Introduces topics in general, organic, and biological chemistry that are used in health-related occupations. Included are scientific measurement, atomic structure and bonding, chemical equations and stoichiometry, solutions, acids, bases, buffers, gas behavior, nuclear radiation, organic functional groups, and the biologically important compounds: carbohydrates, lipids, and proteins. (F, Sp)

CHEM 125 Basic Chemistry

Prerequisite: Reading Level 5 and Writing Level 4 and (Math Level 5 or MATH 107 Concurrently)
Designed for students who have not had high school chemistry or who require a refresher course. Measurement, problem solving, chemical formulas, chemical equations, stoichiometry, atomic structure, chemical bonding, gas laws, solutions, and acids and bases are emphasized. (F, Sp, Su)

CHEM 130 Biochemistry

Prerequisite: Reading Level 5 and Writing Level 4
Recommended: CHEM 120 or CHEM 125 2.0 minimum
This course is designed to provide an understanding of the chemistry of life processes. Topics include organic functional groups, enzymes, carbohydrates, lipids, proteins, metabolic pathways, nucleic acids, biochemical genetics, blood and respiratory chemistry, urine, electrolytes, acid-base balance, and hormones. (Sp, Su)

CHEM 135 Chemistry in Society

Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
A general education course which presents chemistry to non-science majors who must function and make decisions in a society shaped by science and technology. Chemistry knowledge is introduced and applied on a need-to-know basis with respect to issues in society that have significant chemistry components. (Sp, Su)

CHEM 151 General Chemistry Lecture I

Prerequisite: Reading Level 5 and Writing Level 6 and (Math Level 6 or MATH 112 Concurrently)
Recommended: (CHEM 125 2.0 minimum or High School Chemistry) and CHEM 161 Concurrently
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 include measurement, aqueous reactions, stoichiometry, thermodynamics, atomic structure, bonding, and acids and bases. (F, Sp, Su)

CHEM 152 General Chemistry Lecture II

Prerequisite: CHEM 151 2.0 minimum and Reading Level 5 and (Math Level 8 or MATH 121 Concurrently)
The second of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, sciences, or engineering. Topics include kinetics, ionic equilibrium, thermodynamics, electrophoresis, descriptive chemistry, and nuclear chemistry. (F, Sp, Su)
CHES 100 Intro to Health Professions
Prerequisite: Reading Level 5
This course is an overview of the health care industry, including medical ethics, trends in health care, and exploration of career options. It includes introduction to medical terminology, anatomy and physiology, vital signs measurement, math used for conversions, basic cardiac life support skills, and universal precautions / blood borne pathogen training. (F, Sp)

CHES 101 Acute Care Nurse Assist/Orderly
Prerequisite: Reading Level 3
This course will prepare an individual for employment as a nursing assistant/orderly in a hospital, or other acute care delivery setting. The course will provide the knowledge and skills needed in order to provide safe basic patient care. This course does not qualify students to take state exam for nurse aide. (F, Sp, Su)

CHES 108 Long-term Care Nurse Aide
Prerequisite: Reading Level 3
This course will prepare an individual to be a nurse aide in a long-term care facility or home health care agency. This state-approved course will provide specific knowledge and skills required for a nurse aide to safely function in a long-term care setting. Upon completion of this course, the student is qualified to take the State Competency Evaluation Nurse Aide Examination. (F, Sp, Su)

CHES 110 Nurse Aide: Acute & Long-Term
Prerequisite: Reading Level 3
This course will provide individuals to be nurse assistants in an acute care setting, long-term care facility, or home health care agency. Course will provide specific knowledge and skills required to deliver safe basic care and to become a Certified Nurse Assistant (CNA), upon passing of State examination. (F, Sp, Su)

CHES 114 Introduction to Pathology
Prerequisite: BIOL 145 2.5 minimum
(General principles of pathology are discussed, rather than specific disease entities, to develop a new way of thinking about disease processes. Concepts of disease processes and their effect on normal structure and function of the body are emphasized. (F, Sp)

CHES 115 Pharmacology-Allied Health
Prerequisite: BIOL 145 2.5 minimum or Concurrently
This course is designed to familiarize the student with common medications encountered in health care occupations. Emphasis is on drug categories and the responsibilities associated with medication administration. (F, Sp, Su)

CHES 116 EKG for Health Care Providers
Prerequisite: None
Recommended: Health Careers Applicant or Professional
This course is designed to teach the basic skills and knowledge necessary to perform, process, and explain the electrocardiogram. An overview of anatomy and physiology of the cardiovascular system, operation of the electrocardiograph and recording EKGs, cardiac pathology, and basic cardiac rhythm recognition will be presented. (F, Sp)

CHES 117 Health Law and Ethics
Prerequisite: None
Recommended: Health Careers Applicant or Professional
This course presents for discussion legal and ethical issues arising from the organization and delivery of health care services. Topics include contracts, torts, business law: medical recordkeeping and retention; physicians' public duties; licensure, certification and regulation of health professionals; consent for treatment; and exploration of issues arising from various biotechnical topics. (F, Sp)

CHES 118 Herbolology in Health Careers
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: Health Careers Student or Professional
Principles of herbolology are discussed along with an overview of Western and Eastern herbal traditions. Pharmacology of names for both Western herbs and herbs used in traditional Chinese medicine is emphasized. Concepts of health, disease and treatment from Western and Eastern medical perspectives are discussed with emphasis on herbal interactions with drugs and the use of herbal alternatives to drug therapies. (F, Sp)

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHSE 119</td>
<td>Community Health Career Topics</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>This course offers students the opportunity to learn</td>
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<td></td>
<td>community health career skills and knowledge.</td>
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<td>Specific topics will vary with each seminar</td>
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<td>and will be related to the community health careers.</td>
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<td></td>
<td>(F, Sp, Su)</td>
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<tr>
<td>CHSE 120</td>
<td>Medical Terminology</td>
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<td></td>
<td>Prerequisite: Reading Level 5 and Writing Level 4</td>
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<td></td>
<td>Medical Terminology will provide a basic knowledge of</td>
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<td>word building, use, pronunciation, spelling of</td>
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<td>medical terms, applying terms to the function and</td>
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<td>structure of body systems and specific disease</td>
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<td>conditions. Emphasis is placed on medical</td>
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<td>terms in periodicals, textbooks, and medical care</td>
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<td>areas. This is a health careers foundational course.</td>
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<td>(F, Sp, Su)</td>
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<tr>
<td>CHSE 123</td>
<td>Medical Insurance Billing I</td>
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<td></td>
<td>Prerequisite: CHSE 120 2.5 minimum or CHSE 121</td>
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<td>2.5 minimum or OADM 137 2.5 minimum</td>
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<td></td>
<td>This two-semester sequence course introduces insurance</td>
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<td>billing, diagnostic and procedure coding using the</td>
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<td>ICD-9, CPT, HCPCS and manuals for BCBS, Medicare,</td>
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<td>Medicaid, worker's compensation, commercial</td>
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<td>insurance, and HMOs. Legal and compliance</td>
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<td>issues and responsibilities, and their relationship</td>
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<td>to insurance are discussed. Computerized insurance</td>
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<td>billing information is provided. (F)</td>
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<td>CHSE 124</td>
<td>Medical Insurance Billing II</td>
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<td></td>
<td>Prerequisite: CHSE 123 2.5 minimum</td>
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<td></td>
<td>The second course in a two-semester sequence. Includes</td>
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<td>comprehensive billing directions for BCBS of Michigan,</td>
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<td>Medicare, Medicaid, commercial insurance including</td>
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<td></td>
<td>HMOs, managed care, and worker's compensation. (Sp)</td>
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<td>CHSE 125</td>
<td>Computers in Medical Office</td>
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<td></td>
<td>Prerequisite: CHSE 123 2.5 minimum or (CHSE 124 2.5</td>
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<td>minimum or Concurrently)</td>
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<td>Recommended: Keyboard Experience</td>
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<td>Course covers one or more current computer software</td>
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<td>programs. Students learn to record charges/payments,</td>
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<td>information, schedule appointments, ICD-9 and CPT</td>
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<td>coding, produce claim forms and patient statements,</td>
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<td>submit claims electronically, and build databases.</td>
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<td>A certificate of completion is awarded for Medical</td>
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<td>insurance Billing at a grade point of 2.0 or better</td>
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<td>is earned in CHSE 123, 124, and 125, (F, Sp)</td>
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<td>CHSE 132</td>
<td>Health Unit Coordinator</td>
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<td></td>
<td>Prerequisite: CHSE 120 2.5 minimum or CHSE 121 2.5</td>
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<td>minimum Course is designed to introduce the student</td>
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<td>to basic health care unit coordinator skills.</td>
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<td>Subject matter will include communication skills,</td>
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<td>computers, assertiveness, chart forms, admissions,</td>
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<td>transfers, discharges, death and dying, pharmacology,</td>
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<td></td>
<td>laboratory tests, transcribing physician orders, and</td>
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<td>job application skills. Clinical component is included.</td>
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<td>(F, Sp)</td>
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<tr>
<td>CHSE 143</td>
<td>Phlebotomy Technician</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>This course is designed to prepare a person to</td>
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<td>function as a phlebotomy technician. It will provide</td>
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<td>the knowledge and skill necessary to safely</td>
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<td>and skillfully obtain a blood specimen from a patient.</td>
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<td>The course includes lecture and campus laboratory.</td>
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<td></td>
<td>(F, Sp)</td>
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<tr>
<td>CHSE 145</td>
<td>Healthcare Central Serv Tech</td>
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<td></td>
<td>Prerequisite: Reading Level 3</td>
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<td>This course prepares individuals to function</td>
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<td></td>
<td>competently in the central service department of a</td>
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<td>health care facility. Duties include (but are not</td>
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<td>limited to) processing of patient care equipment,</td>
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<td>supplies, and instruments for use in all</td>
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<td>departments. Includes principles and practices of</td>
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<td>decontamination, cleaning, disinfection, sterilization,</td>
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<td></td>
<td>and distribution of medical surgical supplies. (F)</td>
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<td>CHSE 201</td>
<td>Dietary Manager I</td>
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<td></td>
<td>Prerequisite: Department Approval</td>
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<td></td>
<td>The first course in a three-semester sequence</td>
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<td>preparing students for careers as dietary managers.</td>
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<td></td>
<td>Comprised of classroom and field experience and</td>
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<td></td>
<td>focusing on nutrition and diet therapy. The content</td>
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<td>includes interpreting, modifying, planning,</td>
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<td>and recording nutritional data, as well as</td>
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<td>conducting client centered, educational</td>
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<td></td>
<td>sessions. (F)</td>
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<tr>
<td>CHSE 202</td>
<td>Dietary Manager II</td>
<td>6.5</td>
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<td>Prerequisite: CHSE 201 2.5 minimum</td>
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<td>The second course in a three-semester sequence</td>
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<td></td>
<td>preparing students for careers as dietary managers.</td>
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<td></td>
<td>Comprised of classroom and field experience, this</td>
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<td>course focuses on the sanitation and management of a</td>
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<td>foodservice operation. The emphasis is on sanitation</td>
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<td>practices involving purchasing, storing, preparing,</td>
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<td></td>
<td>and serving food that is nutritious and safe. (Sp)</td>
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</table>

**CISB - Computer Information Systems for Business**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: Reading Level 3 and Writing Level 4</td>
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<td></td>
<td>This course provides an introduction to computers,</td>
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<td></td>
<td>their role in managing business information systems,</td>
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<td>their influence on society, and their use in</td>
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<td>personal productivity. It includes a hands-on</td>
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<td>introduction to three major microcomputer tools:</td>
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<td>word processors, spreadsheets, and database</td>
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<td></td>
<td>management systems. (F, Sp, Su)</td>
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<td>CISB 102</td>
<td>Internet Literacy</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: CISB 101 2.5 minimum</td>
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<td></td>
<td>Recommended: Windows Familiarity</td>
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<td></td>
<td>This course teaches basic hands-on skills and</td>
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<td>knowledge for Internet professionals. Internet</td>
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<td>Fundamentals guides students through the Internet and</td>
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<td>its array of useful resources. Web Page Authoring</td>
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<td>Fundamentals teaches students Web page creation and</td>
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<td>Web authoring. Networking Fundamentals teaches students</td>
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<td></td>
<td>fundamental networking concepts and practices. Students</td>
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<td>will take the CIW Foundations Exam &quot;IDF-410 for the</td>
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<td></td>
<td>Certified Internet Webmaster Associate certification.</td>
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<tr>
<td></td>
<td>(F, Sp, Su)</td>
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<td>CISB 104</td>
<td>Introduction to DOS</td>
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<td></td>
<td>Prerequisite: Reading Level 5</td>
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<td>Students in this course develop skill in applying the</td>
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<td>most common commands of the disk operating system (DOS)</td>
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<td>used by IBM-compatible microcomputers. Students also</td>
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<td></td>
<td>learn how to organize disk directories and how to</td>
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<td>create and work with files. File attributes, pipes,</td>
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<td>filters, and redirection are also discussed. (F, Sp,</td>
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<td></td>
<td>Su)</td>
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<tr>
<td>CISB 107</td>
<td>DOS Management</td>
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<td>Prerequisite: Reading Level 5</td>
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<td></td>
<td>Recommended: CISB 104</td>
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<td>Students in this course learn advanced concepts in</td>
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<td></td>
<td>managing a DOS based operating system. Techniques are</td>
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<td>introduced for batch files, replaceable parameters,</td>
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<td>batch programming, memory and configuration files,</td>
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<td></td>
<td>viruses, and the Windows Registry. (F, Sp, Su)</td>
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<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
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<tr>
<td></td>
<td>Prerequisite: Reading Level 5</td>
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<tr>
<td></td>
<td>An introduction to programming logic which includes</td>
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<td>an introduction to structured design, programming</td>
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<td>control structures, arrays, file update, and control</td>
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<td>break processing. Flowcharts and the Warnier-Orr</td>
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<td></td>
<td>diagram are used for logic design. Coding examples</td>
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<td>and problems are covered using QBASIC and Visual</td>
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<td>BASIC. (F, Sp, Su)</td>
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<tr>
<td>CISB 119</td>
<td>Intro Window Prog Visual BASIC</td>
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<td></td>
<td>Prerequisite: Reading Level 5</td>
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<td>Recommended: MATH 650 or Equivalent</td>
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<td></td>
<td>An introduction to concepts of Windows programming</td>
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<td>using Visual Basic. Students learn to develop</td>
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<td>business applications by designing and creating a</td>
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<td>user interfaces and writing the necessary</td>
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<td>procedures. Topics include user interface design,</td>
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<td>beginning programming concepts, file and database</td>
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<td></td>
<td>programming. (F, Sp, Su)</td>
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CISB 122 Adv Windows Prog Visual BASIC
Prerequisite: Reading Level 5
Recommended: CISB 118
A second course in the Visual Basic programming sequence. This course presents programming in the Windows environment and leads to the creation of functional Windows application programs. Topics include advanced form design, random access files, development of error handlers, development of keyboard handlers creating class modules, database access and programming, developing help systems, and making Windows API calls. This course includes the exam that leads to Microsoft Certified Professional Certification. (F, Sp)

CISB 130 Data Communications
Prerequisite: CISB 100 2.0 minimum and Reading Level 5 and Writing Level 6
Recommended: CISB 114 or CISB 119
The course provides a comprehensive introduction to data communications systems, how they are integrated, and differences between the various networks and network barriers. Students learn terminology and major protocols to a level adequate to discuss data communication topics with other professionals. This course includes the NIT-226 ComptIA Network+ exam that leads to Comp TI A Network+ certification. (F, Sp, Su)

CISB 133 Operating Systems
Prerequisite: Reading Level 5
Recommended: CISB 100 and (CISB 114 or CISB 119)
The course covers what operating systems are, why they exist, what they do, and how they interface with the operators and programmers. Main memory management and processor scheduling are studied along with device and file management. Case studies of current operating systems are studied. (F, Sp)

CISB 137 Introduction to Oracle SOL
Prerequisite: Reading Level 5
Recommended: Windows Familiarity
This course covers the concepts of relational databases, SOL and PL/SQL. Students learn to create and maintain database objects, store, retrieve, and manipulate data, and create PL/SQL blocks of application code. At the end of this course the student will take the Oracle Exam 1Z0-011 which is a part of the Oracle Internet Application Developer Certification. (F, Sp)

CISB 138 Oracle PL/SOL Program Units
Prerequisite: CISB 136 2.0 minimum or CISB 137 2.0 minimum
This course introduces the PL/SQL programming language. Students create executable PL/SQL blocks of application code, develop and manage PL/SQL program units and database triggers, manage event procedures, manipulate large objects, handle exceptions, and use the Oracle-supplied package. Students will take the Oracle Exam 120-161 which is part of the Oracle Internet Application Developer Certification. (F, Sp)

CISB 147 Oracle: Build Internet Apps I
Prerequisite: CISB 138 2.0 minimum
In this course students build and test interactive Internet applications. Working in a graphical user interface (GUI) environment, students learn to customize forms with user input items such as check boxes, list items, and radio groups. They also learn to modify data access by creating event-related triggers. Students will take the Oracle Exam 120-151 which is part of the Oracle Internet Application Developer Certification. (F, Sp)

CISB 148 Oracle: Build Internet Apps II
Prerequisite: CISB 147 2.0 minimum or (CISB 136 2.0 minimum and CISB 143 2.0 minimum)
In this course students broaden their application building skills using Oracle Forms Developer. Students create multi-form Internet applications, learn to manage multiple transactions across modules, and enhance applications by adding custom menus, reports, charts, and Web-deployed forms using Java Beans. Students will take the Oracle Exam 120-132 which is part of the Oracle Internet Application Developer Certification. (F, Sp)

CISB 170 COBOL I
Prerequisite: None
Recommended: CISB 100 and (CISB 114 or CISB 119)
This is an introductory course in COBOL programming emphasizing syntax, structured program design, and business application processing concepts. Coddng 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 180 Intro to C/++, Program for Bus
Prerequisite: None
Recommended: CISB 100 and (CISB 114 or CISB 119)
Students will use professional development tools to become familiar with the C programming language by designing, implementing, and testing programming projects. Topics include pointers, linked lists, data structures, and dynamic memory allocation. (F, Sp)

CISB 200 Info Sys Tech/Problem Solving
Prerequisite: Reading Level 5 and Writing Level 6
Fundamental changes have occurred in organizations with the application of computer technology. This course chronicles the source of that technology in science, explores the limitations of computer technology, examines the impact of the technology in business organizations and society, and develops problem-solving techniques for use in conjunction with computers. Students will work in teams, make group presentations and apply continuous improvement methods. (F, Sp, Su)

CISB 213 Developing Pages for the Web
Prerequisite: CISB 152 2.0 minimum or ARTS 173 2.0 minimum
Recommended: Reading Level 5 and Writing Level 6
This course explores techniques of web page construction including HTML and the appropriate use of multimedia elements. Students will develop individual websites that progress to include elements such as graphics, sound, video and forms. Students will also demonstrate, as a team, their understanding and application of the concepts introduced during the semester. (F, Sp, Su)

CISB 214 Commercial Internet Site Mgmt
Prerequisite: CISB 202 2.0 minimum
Recommended: Reading Level 5 and Writing Level 6
This course introduces concepts of website management. Students will explore websites planning, promotion, security, and access control, as well as the legal issues with website management. Students will gain familiarity with various operating platforms and service software. (F, Sp)

CISB 227 Adv Concepts Computer Info Sys
Prerequisite: Department Approval
With this course, students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. (F, Sp, Su)

CISB 230 Intro to Local Area Networks
Prerequisite: CISB 150 2.0 minimum and CISB 133 2.0 minimum
The student in this course learns about a Local Area Network (LAN). Topics include students to a point where they can administer a Novell NetWare 5.1 network. This course includes the Novell Netware 5.1 Administration 56-853 exam that leads to Certified Novell Administrator for NetWare 5.1 certification. (F, Sp)

CISB 231 Advanced Local Area Networks
Prerequisite: CISB 230 2.0 minimum
The student in this course learns administration techniques for Novell NetWare 6. Topics include a review of network security technology and Internet-based tools. This course includes the Foundations of Novell Networking 56-577 exam that leads to Certified Novell Administrator for NetWare 6 certification. (F, Sp)

CISB 233 Microsoft Network Server
Prerequisite: CISB 130 2.0 minimum and CISB 133 2.0 minimum
This course provides students with an understanding of Microsoft Windows Server administration. The course focuses on installing and configuring a server, setting up and managing network printing services, establishing remote access services, setting up Internet services, and troubleshooting problems. This course includes the 70-215 Installing, Configuring, and Administering Microsoft Windows 2000 Server exam that leads to Microsoft Certified Professional certification. (F, Sp)

CISB 234 Linux/UNIX Operating System
Prerequisite: CISB 130 2.0 minimum and CISB 133 2.0 minimum
This course provides hands-on training in the Linux operating system. Students will learn to install, use, and administer a Linux operating system including shell programming and user account management. Application software for Linux operating systems will also be discussed. This course includes the XKC-261 CompTIA Linux+ exam that leads to Comp TIA Linux+ certification. (F, Sp)
CISB 326 - Systems Implementation
Prerequisite: CISB 260 2.0 minimum
This course applies the concepts and techniques of systems analysis and design developed in CISB 260 into working systems. Project management concepts will be presented as well as new concepts in systems analysis and design, such as Computer-Assisted Software Engineering (CASE) tools, Object-Oriented Analysis (OOA), etc. Students will be turned into project teams for a course project. (F, Sp)

CISB 270 - COBOL II
Prerequisite: CISB 170 2.0 minimum
As an advanced COBOL course covering indexed file creation and updating, subprogram concepts, and writing interactive programs. Copy libraries are used, and a system of related programs is completed as a class project. (Sp)

CISB 280 - Adv C++ Program with OOP
Prerequisite: CISB 180 2.0 minimum
Students will build on their knowledge of C Programming to become familiar with the C++ programming language and object-oriented programming and design by designing, implementing, and testing programming projects. Encapsulation, inheritance, and polymorphism are explored. (F, Sp)

CISB 281 - Visual C++ Programming
Prerequisite: CISB 122 2.0 minimum
An introduction to the fundamentals of C++ as a context-linking program in the Windows environment. Students will use existing classes and visual tools to rapidly create applications, learning object-oriented techniques with C++ tools. This course includes the 70-016 Designing and Implementing Desktop Applications with Microsoft Visual C+++6.0 exam that leads to Microsoft Certified Professional certification. (F, Sp)

CIVIL 101 - Civil Drafting
Prerequisite: CADD 100 2.5 minimum (previously DTDS 100) or LAND 100 2.5 minimum or Drafting Placement Test 70%
This course emphasizes plotting and surveying descriptions, traverses, contours, profiles, cross-sections, templates, and the three views required in highway work. Students will learn how to read basic highway plans and make sketches from field notes. (F, Sp)

CIVIL 120 - Surveying
Prerequisite: MATH 114 3.0 minimum or Math Level 5
Introduces students to surveying and land surveying technology and the use of the latest equipment. Emphasis is placed on developing skills in operation and the proper handling of high-tech equipment used in the surveying business. Good field work habits and office engineering are covered. (F, Sp)

CIVIL 124 - Route Survey
Prerequisite: CIVIL 120 2.5 minimum
This course includes surveying computations in such areas as horizontal curves, vertical curves, spirals and data needed for highway construction layout. Also includes work with surveying computation software and fieldwork with total stations. (F, Sp)

CIVIL 131 - Traffic Technology
Prerequisite: None
This course introduces basic principles of traffic engineering design, signing and pavement marking, traffic signalization and how these elements are used to improve motorists safety. Emphasis is placed on the use of these devices in and around construction zones. Basic concepts on traffic flow and capacity analysis will be presented. (Sp)

CIVIL 132 - Construction Materials
Prerequisite: MATH 114 3.0 minimum or Math Level 5
Students will study techniques and equipment used in constructing bridges, buildings, highways and pipelines. Deals with determination of properties of aggregates, concrete and other bituminous materials. Teaches methods of designing concrete mixes for different uses and methods of sampling and testing. (F, Sp)
CIVIL 135  Soil Technology  
Prerequisite: MATH 114 3.0 minimum or Math Level 5  
Exploring, sampling, testing and evaluating subsurface materials and their affect on construction in this course. Includes an introduction to methods of subsurface drainage, soil classifications and physical properties of soils, and discussion, demonstration and performance with equipment used in density testing. (Sp)  

CIVIL 138 Hydrology and Highway Tech  
Prerequisite: CIVIL 131 3.0 minimum and (MATH 114 3.0 minimum or Math Level 5)  
This course is an introduction to highway inventory, planning, organization, permit, financing of funds, geometric design, earthwork, and drainage structures. Emphasis is placed on these elements as components of final highway plans. Analysis of precipitation and the attendant runoff and recharge will be introduced. (Sp)  

CIVIL 200  Civil Mathematics  
Prerequisite: MATH 114 3.0 minimum or Math Level 5  
This course applies differential calculus and integral calculus to practical technical problems. Topics include related rates, maximum and minimum problems and areas under curves. (Sp)  

CIVIL 225  Independent Study/Civil  
Prerequisite: None  
Restriction: Civil Technology Majors  
Students are allowed to undertake special research projects to apply to their professional experience and academic major. A minimum of 48 hours of work per credit and the completion of a written report project. This course cannot be audited. (Sp)  

CIVIL 241  Statics/Strength of Materials  
Prerequisite: CIVIL 202 2.5 minimum  
Structural terminology and concepts are introduced. General behavior of structural members in compression, stress, strain, creep, fatigue, yield, tension, shear, bending and torsion due to different loading conditions are studied. Loads and forces, conditions of stability and equilibrium in structural frames and free body analysis for reactions and member forces are considered. (Sp)  

CIVIL 271  MDOT Internship I  
Prerequisite: Department Approval  
Provide first-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction as well as attending in class instruction. Enrollment is restricted to MDOT Civil Technology students. (Su)  

CIVIL 272  MDOT Internship II  
Prerequisite: Department Approval  
Provide second-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction as well as attending in class instruction. Enrollment is restricted to MDOT Civil Technology students. (F, Su)  

CJUS 106  Intro to Juvenile Justice  
Prerequisite: Reading Level 5 and Writing Level 4  
This course emphasizes the legal foundation; as defined by Michigan law, upon which the criminal justice practitioner must rely in dealing with the juvenile offender and the juvenile victim. In addition, this course will introduce the student to the juvenile offender. (F, Sp, Su)  

CJUS 126  Juvenile Offenders/Their Fam  
Prerequisite: None  
The course takes an in-depth look at the diverse nature of juvenile offenders and their family backgrounds. Issues impacting juvenile behavior such as gender, gangs, drugs, and disabilities will be discussed. (F, Sp, Su)  

CJUS 130  Local Detention  
Prerequisite: Reading Level 5 and Writing Level 4  
The course explains operations of local detention facilities and their unique role in the criminal justice system. Emphasis is placed on Michigan jail and lockup operations, as well as the organization, management, policy environment, and emerging issues confronting American jails. Differences in jail and prisons regarding operations and differing clientele are also covered. (F, Sp)  

CJUS 131  Introduction to Corrections  
Prerequisite: Reading Level 5 and Writing Level 4  
Recommended: Math Level 3  
Introduction to agencies and processes within the correctional system. An examination of correctional officer behavior, corrections legislation, the courts, correctional institutions and their operation, and administration. Includes overview of history sentencing, probation, parole, and community corrections. This course is required for the corrections officer vocational certificate. (F, Sp)  

CJUS 133  Juvenile Residential Services  
Prerequisite: None  
Recommended: CJUS 106 1.0 minimum or Concurrently  
All aspects of court placement of juveniles in residential facilities will be examined. Staffing and operations of both public and private agencies will be discussed, focusing both on treatment and detention issues. (F, Sp, Su)  

CJUS 134  Probation and Parole  
Prerequisite: CJUS 101 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently  
An introductory level course in probation and parole with a strong emphasis on counseling, interviewing skills, and supervision techniques. Students will also learn the mechanics of writing violation, progress, and pre-sentence reports. (F, Sp, Su)  

CJUS 135  Legal Issues in Corrections  
Prerequisite: CJUS 130 1.0 minimum or CJUS 131 1.0 minimum or Concurrently  
Study of current constitutional, federal and state law as it pertains to penal institutions, inmates, and correctional employees. The course will provide students with insight into policy considerations based on state and federal law, legal process, court decisions, and inmate rights. This course is required for the correctional officer vocational certificate. (F, Su, Sp)  

CJUS 201  Criminal Justice Org/Admin  
Prerequisite: CJUS 101 1.0 minimum or Concurrently  
Examines the primary concepts of criminal justice organization and administration emphasizing processes and theorists, communications, leadership, personnel, budgeting, planning, information management, and community relations. (F, Sp, Su)  

CJUS 203  Criminal Procedure  
Prerequisite: CJUS 103 1.0 minimum or Concurrently  
Study of criminal procedural law. Includes laws of arrest, search and seizure, and admissions and confessions; suspects identification; and rules of evidence. (F, Sp)  

CJUS 204  Criminal Investigation  
Prerequisite: Reading Level 5 and Writing Level 4  
Recommended: CJUS 103 1.0 minimum  
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
Prerequisite: CJUS 101 1.0 minimum
This course is designed to provide the student with an understanding of the philosophy of community policing. As such, the components and processes involved in the implementation of non-traditional policing methods, as well as the development of a partnership between the community and the police, will be examined. (F, Sp)  
CJUS 242 Unarmed Defense 3
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 CJ 2
Prerequisite: CJUS 161 1.0 minimum or CJUS 130 1.0 minimum or CJUS 131 1.0 minimum
Designed to meet the needs of criminal justice writing. Components include grammar, punctuation, sentences, paragraphs, styles of writing, and proper documentation of work effort. Frequent writing practice. (F, Sp, Su)  
CJUS 250 Correctional Institutions 3
Prerequisite: CJUS 131 1.0 minimum or Concurrently
Examines the historical development of corrections institutions in the United States. The organizational structure, purpose, programs, security aspects, and prisoner due-process rights, as well as the future of institutions, will be examined. This course is required for the correctional officer vocational certificate. (F, Sp, Su)  
CJUS 251 Correctional Clients 3
Prerequisite: (CJUS 190 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently
Emphasis is placed on the needs, identities and development of the recipient of correctional services. Students will gain insight into the behavior and motivations of the corrections client and learn intervention strategies. This course is required for the correctional officer vocational certificate. (F, Sp, Su)  
CJUS 255 Human Relations/Criminal Just 3
Prerequisite: (CJUS 101 1.0 minimum or CJUS 130 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently and Reading Level 5
This course focuses on understanding those aspects of interpersonal relations 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 Invest & Procedures 3
Prerequisite: None
Co-requisite Course(s): CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 269 and CJUS 267 and CJUS 268 and PFFT 114
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 Crime Law & Procedure 3
Prerequisite: None
Co-requisite Course(s): CJUS 260 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114
Designed for hands-on, practical instruction in criminal law and procedure as it pertains to law enforcement in the state of Michigan. Topics include crimes against persons and property, regulatory crimes, public order crimes, juvenile law, admissions/confessions, laws of arrest, search and seizure, and suspect identification. (Sp, Su)  
CJUS 262 Patrol Procedures and Tactics 3
Prerequisite: None
Co-requisite Course(s): CJUS 260 and CJUS 261 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114
The course is designed to identify and utilize proper patrol techniques and procedures necessary for a police officer to function safely and effectively. Topics include preparation for patrol, types of patrol, responding to crimes in progress, roadblocks, civil process, handling abnormal persons, and officer survival. (Sp, Su)  
CJUS 263 Standard First Aid 2
Prerequisite: None
Co-requisite Course(s): CJUS 266 and CJUS 261 and CJUS 262 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114
Designed to identify the roles and responsibility of a law enforcement officer at the scene of a medical emergency based upon American Red Cross standard first aid and CPR training. (Sp, Su)  
CJUS 284 Rpt Writing in Law Enforce 1
Prerequisite: None
Co-requisite Course(s): CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114
Designed to prepare the student to effectively and efficiently write a proper police report that will serve as a basis for the issuance of a warrant and court prosecution. Topics include obtaining information, basic English skills, criminal justice terminology, and proper formatting. (Sp, Su)  
CJUS 285 Highway Traffic Operations 3
Prerequisite: None
Co-requisite Course(s): CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114
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., and accident investigation. (Sp, Su)  
CJUS 286 Basic Police Science 3
Prerequisite: None
Co-requisite Course(s): CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114
This course is concerned with technical and physical techniques employed in the investigation of crime. The course involves traditional classroom as well as field experiences. (Sp, Su)  
CJUS 287 Law Enforcement Phys Traing 2
Prerequisite: None
Co-requisite Course(s): CJUS 250 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114
Designed to assist law enforcement students in developing and improving their physical fitness. The course includes running, aerobics, calisthenics, and stretching. (Sp, Su)  
CJUS 288 Precision Driving 3
Prerequisite: None
Co-requisite Course(s): CJUS 250 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114
The course is designed to identify and utilize proper driving techniques and procedures using the principles of precision driving. Course involves both classroom and hands on driving. (Sp, Su)  
CJUS 289 Independent Study 1-3
Prerequisite: Department Approval
Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments that will introduce them to research procedures and resources. (F, Sp, Su)  
CJUS 295 Law Enforcement Internship 2
Prerequisite: Department Approval
Sixteen eight-hour shifts are scheduled with an approved police department. Written reports are required. (F, Sp, Su)  
CJUS 296 Juvenile Internship 3
Prerequisite: CJUS 106 1.0 minimum or Concurrently and Department Approval
The student will be placed in a local program dealing with young people from at risk populations. A classroom component includes preparation for job interviews and other skill-building exercises for working in the juvenile justice field. Written reports are required. (F, Sp)
CJUS 287 Juvenile Internship II
3
Prerequisite: (CJUS 133 1.0 minimum or Concurrently) and CJUS 286 1.0 mini-
mum and Department Approval
Recommended: For Juvenile Care Worker Students
The student will be placed in a residential facility with juveniles who have been adjudicated by the court to be detained in a secure environment for treatment and rehabilitation purposes. (F, Sp, Su)

CJUS 288 Corrections Internship
3
Prerequisite: Department Approval
The student will be placed in a local or state corrections facility that will allow him or her to experience many facets of correction operations. Weekly written reports are required and periodic meetings are mandatory. A minimum of 160 hours is required. (F, Sp, Su)

CNCP - Computerized Numerical Control Program

CNCP 101 PC Applications for Technology
3
Prerequisite: None
An introduction to PCs as used in a technical-industrial setting. Students will learn how computer hardware is set up, Windows NT along with word processing, spreadsheet, computer graphic and presentation software will be covered. Students will extensively use the Internet to obtain assignments, turn in homework and research projects. (F, Sp, Su)

CNCP 105 Basic Machining Processes
3
Prerequisite: (MATH 114 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 4
Recommended: Computer Experience
This course is designed for non-machinist/Computerized Numerical Control (CNC) programming majors who need an introduction to machining processes and systems. Topics covered will include conventional machining processes, basic CNC programming and Computer-Aided Manufacturing (CAM) operations. (F, Sp, Su)

CNCP 110 Foundations of CNC Programming
4
Prerequisite: MATH 105 3.0 minimum and (MATH 114 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 4
Recommended: Computer Experience
This course lays the foundation for all other Computerized Numerical Control (CNC) courses. Subjects covered include Z-axis cycles, tool diameter compensation, rough and pocketing cycles, macros and sub-programs, and parametric programming with equations. Students will write programs for 3-axis and 5-axis milling and 3-axis lathes. (F, Sp)

CNCP 130 Machine Controls and Setup
4
Prerequisite: CNCP 110 2.0 minimum
Focuses on the set up and operation of a variety of CNC machines ranging from simple 3-axis to sophisticated 5-axis control numerical controls. Topics will include proper machine start up and shut down, tool data management, fixture adjustment and program loading and editing. (F, Sp)

CNCP 190 CNC Project Lab
1-4
Prerequisite: CNCP 130 2.0 minimum
Further skills are pursued involving modern concepts of numerical control of machine tools, including the internerelement of these new manufacturing methods in the various departments of a company. (F, Sp, Su)

CNCP 200 Unigraphics NC
4
Prerequisite: CNCP 110 2.0 minimum and CADD 242 2.0 minimum (previously DTOS 180)
Unigraphics NC (Numerical Control) is a leader in parametric Computer Aided Manufacturing software used to graphically program CNC machine tools. Course topics will cover preparation of drawings for programming, basic AP2 programming, Multi-exo programming and Overlay features. Selected programs will be run on CNC machines. (Sp)

CNCP 210 Mastercam
4
Prerequisite: CNCP 110 2.0 minimum
Mastercam is a powerful graphics based programming software for CNC machine tools. Mastercam software is designed to generate CNC programs from mechanical CAD drawings. Students will use Mastercam to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment. (F, Sp)

CNCP 220 Gibba Cam
4
Prerequisite: CNCP 110 2.0 minimum
This course teaches the student how to generate 3-D models and produce CNC codes for milling and turning applications using Gibba Cam software. (F, Sp)

CPSC 120 Introduction to Computers
3
Prerequisite: Reading Level 3 and Writing Level 4
In this survey course the student learns of the application of computers in society, considers their social and economic implications, examines questions of privacy and security, and considers recent advances in computer technology. In addition, the student is exposed to beginning instruction and practice in word processing, spreadsheets and database applications, programming, and user networks. (F, Sp, Su)

CPSC 230 Algorithms and Computing W/C++
4
Prerequisite: Reading Level 5 and Writing Level 4 and (MATH 151 2.0 mini-
mum or Concurrently)
This course establishes fundamental computational techniques required for continuing study in computer science. Students design, implement and test C++ programs to solve a wide range of problems. Topics include program development, functions, control structures, text file operations, data types/classes, recursion, STL, string/vector classes, arrays, pointer variables, and elementary linked lists. (F, Sp, Su)

CPSC 231 Computing and Data Structures
4
Prerequisite: CPSC 230 2.0 minimum and Reading Level 5 and Writing Level 4
Data abstraction and related theory for representation and access of information using C++. Algorithms and abstract data structures such as the stack, queue, binary search tree, heap and priority queue are studied. (F, Sp)

CPSC 250 Computer Science Structures
4
Prerequisite: Reading Level 5 and Writing Level 4 and MATH 151 2.0 minimum and (CPSC 180 2.0 minimum or CPSC 230 2.0 minimum or Department Approval)
Introduction to logical and algebraic structures and techniques required for further study in computer science. Topics include set language and proof techniques, relations, functions, directed and undirected graphs and their matrix representa-
tions, Boolean algebras and logic networks, regular expressions, finite-state machines, and Turing machines. (Sp)

CPSC 295 Ind. Study in Computer Science
1-4
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

CULI - Credit Union Accounting and Insurance

CULI 102 Credit Union Accounting
3
Prerequisite: None
This course emphasizes those areas of financial accounting relevant to external reporting by credit unions. (Sp)

CUMA - Credit Union Management

CUMA 100 Intro Credit Union Operations
3
Prerequisite: None
This course provides students with an overview of the credit union movement, its position in the financial services industry, and basic credit union operating procedures. Directed toward staff, management, and elected officials of credit unions who wish to increase their knowledge of both the credit union movement and operations. (F, Sp)

CUMA 200 Credit and Collations
3
Prerequisite: None
This course covers the fundamentals of the credit/collection industry. Emphasis is placed on learning the basics of the credit decision-making process, and the collection of past due loans. The course is designed for credit union personnel who want to better understand the relevant laws and regulations of credit union credit and collections. (F, Sp)

CUMA 215 Business Law for Credit Unions
3
Prerequisite: None
This course covers fundamental principles of law applicable to credit union per-
sonnel and will prepare students to perform the legal responsibilities of their jobs more knowledgeably. Course content includes study of contracts, personal and real property, torts, crimes, and the nature and sources of law as related to credit union operations. (F, Sp)

LANING COMMUNITY COLLEGE 2003-2005 231
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 101</td>
<td>Beginning Ballet</td>
<td>None</td>
<td>Designed for students with no dance experience. Includes examination of the history of Ballet, dance anatomy and injury prevention. Focus on basic body and center floor formations, alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning student. (F, Sp, Su)</td>
</tr>
<tr>
<td>DANC 102</td>
<td>Beginning Modern</td>
<td>None</td>
<td>Designed for students with no dance experience. Basic examination of the history of Modern dance, training in dance anatomy, injury prevention, alignment principles, and spatial relationships, and elementary combinations will be explored. Improvisation will be used throughout the course to assist in developing kinesthetic, spatial, cognitive, and physical awareness. (F, Sp, Su)</td>
</tr>
<tr>
<td>DANC 103</td>
<td>Beginning Jazz</td>
<td>None</td>
<td>Designed for the student with no dance experience. Includes examination of the history of Jazz, training in dance anatomy and injury prevention. Basic alignment, warm-up, and isolations in jazz dance technique for beginning dance students are emphasized in addition to spatial relationships and rhythm. (F, Sp)</td>
</tr>
<tr>
<td>DANC 104</td>
<td>Beginning Tap</td>
<td>None</td>
<td>Designed for the student with no dance experience. Includes examination of the history of Tap as well as training in dance anatomy and injury prevention. Basic vocabulary, steps, combinations, and rhythms are explored in addition to spatial relationships. (F, Sp)</td>
</tr>
<tr>
<td>DANC 161</td>
<td>Dance Repertory</td>
<td></td>
<td>This course is designed to give the student who has reached a level of dance technique that will adequately support his/her participation in the concert process. This process includes auditions, rehearsals, and public performances in the ballet genre and concentrations on memorization, projection, and musicality. (Sp)</td>
</tr>
<tr>
<td>DANC 201</td>
<td>Intermediate Ballet</td>
<td>Dance Audition for Intermediate Ballet</td>
<td>This course is designed to include elements of movement theory, alignment, increased training practices, vocabulary, and combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, and development of personal movement style in preparation for performance. Intermediate concepts in ballet history and choreography are explored. Optional shows are offered. (F, Sp, Su)</td>
</tr>
<tr>
<td>DANC 202</td>
<td>Intermediate Modern</td>
<td>Dance Audition for Intermediate Modern</td>
<td>This course includes a continuation of alignment training, spatial relationships, choreography, improvisation, and concentration in Modern Dance history, vocabulary, and movements. Emphasis is placed on center floor transitional techniques, dance dynamics, examination, and practice. Emphasis is placed on an individual movement style in preparation for performance. (F, Sp, Su)</td>
</tr>
<tr>
<td>DANC 203</td>
<td>Intermediate Jazz</td>
<td>Dance Audition for Intermediate Jazz</td>
<td>This course includes a continuation of alignment training, movement theory, increased training practices, isolations, and movement combinations. Emphasis is placed on jazz dance dynamics, center floor transitional techniques, and development of a personal movement style in preparation for performance. Intermediate concepts in improvisation, choreography, and jazz dance history are explored. (F, Sp, Su)</td>
</tr>
<tr>
<td>DANC 204</td>
<td>Intermediate Tap</td>
<td>Dance Audition for Intermediate Tap</td>
<td>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. Intermediate concepts in the history of tap, improvisation and choreography are explored. (F, Sp)</td>
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DENT 290 - Dental Hygiene

DENT 140 - Oral Histology & Embryology
Prerequisite: Admission to the Dental Hygienist Program
Co-requisite Course(s): DENT 142, DENT 144, DENT 146, DENT 148
This course provides an introduction to the field of dental hygiene. Topics include: anatomy, microbiology, dental development, and clinical procedures.

DENT 142 - Preclinical Dental Hygiene
Prerequisite: Admission to the Dental Hygienist Program
Co-requisite Course(s): DENT 140, DENT 144, DENT 146, DENT 148
This course is offered concurrently with DENT 144 to provide preclinical training in clinical dental hygiene procedures. Emphasis is placed on scientific principles and current theory. Topics include: patient communication, treatment planning, and procedures.

DENT 144 - Preclinical DH Practice
Prerequisite: Admission to the Dental Hygienist Program
Co-requisite Course(s): DENT 140, DENT 142, DENT 146, DENT 149
This course is offered concurrently with DENT 142 to provide clinical training in dental hygiene. Topics include: patient care, treatment planning, and procedures.

DENT 146 - Head, Neck & Oral Anatomy
Prerequisite: Admission to Dental Hygienist Program
Co-requisite Course(s): DENT 140, DENT 142, DENT 144, DENT 146
This course provides an introduction to the field of dental hygiene. Topics include: anatomy, microbiology, dental development, and clinical procedures.

DENT 148 - Dental Radiography
Prerequisite: Admission to Dental Hygienist Program
Co-requisite Course(s): DENT 140, DENT 142, DENT 144, DENT 146
This course provides an introduction to dental hygiene procedures. Emphasis is placed on the fundamentals of radiographic techniques and interpretation.

DENT 152 - Dental Hygiene I
Prerequisite: DENT 140 and DENT 142 and DENT 144 and DENT 146
This course provides an introduction to dental hygiene procedures. Emphasis is placed on emergency care, dental hygiene care, and patient care.

DENT 164 - Clinical Dental Hygiene I
Prerequisite: DENT 140 and DENT 142 and DENT 144 and DENT 146
This course provides an introduction to clinical dental hygiene procedures. Emphasis is placed on patient care and communication.

DENT 166 - Clinical Dental Hygiene II
Prerequisite: DENT 140 and DENT 142 and DENT 144 and DENT 146
This course provides an introduction to clinical dental hygiene procedures. Emphasis is placed on patient care and communication.

DENT 168 - Clinical Dental Hygiene III
Prerequisite: DENT 140 and DENT 142 and DENT 144 and DENT 146
This course provides an introduction to clinical dental hygiene procedures. Emphasis is placed on patient care and communication.

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DENT 156 Nutrition 3
Prerequisite: DENT 140 2.0 minimum and DENT 142 2.0 minimum and DENT 144 2.0 minimum and DENT 146 2.0 minimum and DENT 148 2.0 minimum.
Corequisite Course(s): DENT 160 and DENT 154 and DENT 165 and DENT 160.
This course discusses the identification, function, metabolism, and sources of specific nutrients required for normal growth, development, and repair of tissues. Application of principles to the individual's nutritional needs, providing nutritional counseling and diet information to special needs patients, and the relationship of nutrition to oral health are emphasized. (Sp)

DENT 156 Pharmacology 3
Prerequisite: DENT 140 2.0 minimum and DENT 142 2.0 minimum and DENT 144 2.0 minimum and DENT 146 2.0 minimum and DENT 148 2.0 minimum.
Corequisite Course(s): DENT 152 and DENT 154 and DENT 156 and DENT 180.
This course provides a study of the importance of the pharmacologic aspects of those drugs and drug groups with which the dentist and dental hygienist are directly and indirectly concerned. Emphasis is placed on nomenclature, origin, physical and chemical properties, preparation, modes of administration, and effects upon the body systems. (Sp)

DENT 160 Oral Pathology 3
Prerequisite: DENT 140 2.0 minimum and DENT 142 2.0 minimum and DENT 144 2.0 minimum and DENT 146 2.0 minimum and DENT 148 2.0 minimum.
Corequisite Course(s): DENT 152 and DENT 154 and DENT 158 and DENT 159.
This course is a study of the disease affecting oral tissues, including the principles of inflammation and repair, developmental disturbances, stains and accretions, diseases of the teeth and supporting structures, oral infection, injuries and neoplasms. (Sp)

DENT 174 Clinical Dental Hygiene II 1
Prerequisite: DENT 152 2.0 minimum and DENT 154 2.0 minimum and DENT 156 2.0 minimum and DENT 158 2.0 minimum and DENT 160 2.0 minimum.
Corequisite Course(s): DENT 176.
This course provides a continuation of clinical skills, patient assessment, treatment and appointment scheduling, preventive techniques and application of dental hygiene procedures. Work-based instruction helps students synthesize new knowledge, apply previous knowledge, and gain experience managing workflow. Practical experience is simultaneously related to theory. Direct supervision is provided by clinical faculty in a clinical setting. (Su)

DENT 176 Dental Materials & Methods 3
Prerequisite: DENT 152 2.0 minimum and DENT 154 2.0 minimum and DENT 156 2.0 minimum and DENT 158 2.0 minimum and DENT 160 2.0 minimum.
Corequisite Course(s): DENT 174.
This course provides a study of the composition, chemical and physical properties, manipulation, and uses of dental materials. Laboratory experiences include the application and manipulation of various materials used in dentistry. (Su)

DENT 240 Anxiety & Pain Control Mgt 2
Prerequisite: DENT 174 2.0 minimum and DENT 176 2.0 minimum.
Corequisite Course(s): DENT 242 and DENT 244 and DENT 246 and DENT 248.
This course will provide the student with basic and current concepts of local anesthetics and pain control for the safe and effective administration of local anesthetic and nitrous oxide/oxygen sedation. Instruction in local anesthetic technique and an introduction to the use of nitrous oxide as an analgesic is included. (F)

DENT 242 Dental Hygiene III 2
Prerequisite: DENT 174 2.0 minimum and DENT 176 2.0 minimum.
Corequisite Course(s): DENT 240 and DENT 244 and DENT 246 and DENT 248.
This course is a continuing development of a theoretical framework of dental hygiene treatment with advancement of dental hygiene proficiency in all areas of dental hygiene treatment. Case histories from patients, are presented and discussed along with preventive measures employed against disease concurrent with clinical practice, with emphasis on special needs patients. (F)

DENT 244 Clinical Dental Hygiene III 3.5
Prerequisite: DENT 174 2.0 minimum and DENT 175 2.0 minimum.
Corequisite Course(s): DENT 240 and DENT 242 and DENT 244 and DENT 246 and DENT 248.
The clinical session combines dental hygiene skills with time management techniques essential for private practice. Comprehensive patient care includes assessment, diagnosis, treatment planning, implementation and evaluation of dental hygiene care, nonsurgical periodontal therapy, ultrasonic instrumentation, patient management, sealants, and comprehensive programs for control of dental diseases. The course consists of faculty supervised patient treatment in the clinic. (F)

DENT 246 Principles of Periodontics 3
Prerequisite: DENT 174 2.0 minimum and DENT 176 2.0 minimum.
Corequisite Course(s): DENT 240 and DENT 242 and DENT 244 and DENT 246.
This course provides a study of the normal and diseased periodontium to include the structural, functional, and environmental factors. Emphasis is placed on etiology, pathology, evaluation of disease, treatment modalities, and therapeutic and preventive periodontics relative to the hygienist's role as a co-therapist in a contemporary practice setting. (F)

DENT 248 Dental Public Health & Educ 3
Prerequisite: DENT 174 2.0 minimum and DENT 178 2.0 minimum.
Corequisite Course(s): DENT 240 and DENT 242 and DENT 244 and DENT 246.
This course provides a study of the principles and concepts of community public health and dental health education. Emphasis is placed on dental epidemiology and statistical methods, community assessment, educational planning, implementation, and evaluation, scientific review of literature, and classroom presentation. (F)

DENT 252 Dental Hygiene IV 2
Prerequisite: DENT 240 2.0 minimum and DENT 242 2.0 minimum and DENT 244 2.0 minimum and DENT 246 2.0 minimum and DENT 248 2.0 minimum.
Corequisite Course(s): DENT 254 and DENT 256.
This course is a continuation of the previous course for advanced practical clinical. The course includes a comprehensive study of specific skills needed along with the examination of the dental hygienist's role in practice settings and employment considerations. Resume preparation, job interviewing, employment preparation, and understanding of local and state ethics for dental hygiene are covered. (Sp)

DENT 254 Clinical Dental Hygiene IV 3
Prerequisite: DENT 240 2.0 minimum and DENT 242 2.0 minimum and DENT 244 2.0 minimum and DENT 246 2.0 minimum and DENT 248 2.0 minimum.
Corequisite Course(s): DENT 252 and DENT 256.
The clinical session combines dental hygiene skills with time management techniques essential for private practice. Comprehensive patient care includes assessment, diagnosis, treatment planning, implementation and evaluation of dental hygiene care, nonsurgical periodontal therapy, ultrasonic instrumentation, patient management, sealants, and comprehensive programs for control of dental diseases. The course consists of faculty supervised patient treatment in the clinic. (Sp)

DENT 256 Community Oral Health 2
Prerequisite: DENT 240 2.0 minimum and DENT 242 2.0 minimum and DENT 244 2.0 minimum and DENT 246 2.0 minimum and DENT 248 2.0 minimum.
Corequisite Course(s): DENT 252 and DENT 254.
Students assess, plan, implement, and evaluate a community dental health project. Dental specialties and the dental hygienist's role in recognizing specialty care needed by patients is presented. Each student participates in a variety of community health projects and observing in dental specialty practices. (Sp)

ECON - Economics

ECON 120 Power, Authority and Exchange 4
Prerequisite: Reading Level 5
A comparative study of primitive and modern economic and political systems and theories. An emphasis will be placed on the evolution of economic and political organizations in human society. (F, Sp)

ECON 201 Principles of Economics-Macro 3
Prerequisite: Reading Level 5 and Math Level 3.
The course is designed to develop objective consideration of economic issues and provides information and understanding of how resources are allocated by prices. Topics include price theory, consumer demand, cost and market structure, the role of government in the market, resource pricing, and international trade. (F, Sp, Su)
ECON 202 Principles of Economics-Macro  
Prerequisites: ECON 201 1.0 minimum or Concurrently and Reading Level 3 and Math Level 3  
This course addresses the theory of national income, employment and the price level, and government fiscal and monetary policies designed to influence aggregate economic activity. It also addresses exchange rates, international financial relationships, and economic growth. (F, Sp, Su)  

ECON 213 U.S. Economic/Business History  
Prerequisites: Reading Level 5  
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)  

ECON 260 Comparative Economic Systems  
Prerequisites: Reading Level 5  
A comparison of different global economic systems and their impact on economic growth, distribution of income and opportunity, and economic treatment of women and minorities. Theories, philosophies, historical development and current practices will be examined. (F, Sp)  

EDUC - Education  

EDUC 201 Teacher Education Practicum  
Prerequisites: Reading Level 5 and Writing Level 5  
Beginning practical experience and training in the field for individual students. The student is placed with an educational institution over a semester. This class allows students to work with a teacher in a classroom setting receiving hands-on experience in the school and classroom environment. (F, Sp)  

EDUC 204 Educational Psychology  
Prerequisites: Reading Level 5 and Writing Level 6  
Investigates the contribution of psychology to education with emphasis on child growth and development, motivation, learning, measurement, and group dynamics that affect student achievement. Specific programs, strategies, theory and research to improve instruction and learning will be explored. This class is assigned for potential certified teachers or paraprofessionals. (F, Sp)  

EDUC 220 Introduction to Education  
Prerequisites: Reading Level 5 and Writing Level 6  
An overview of the foundations, philosophy, history and organization of education as a human endeavor and an introduction to education as a teaching profession. Topics include legal concerns, issues and trends in American education, school governance and school finance. (F, Sp, Su)  

EDUC 225 Reading in Elementary School  
Prerequisites: Reading Level 5 and Writing Level 6  
Recommened: EDUC 220 and EDUC 204 (previously PSYC 204)  
This course provides an introduction to concepts and issues in the reading development of elementary school children. Included are methods of reading instruction and assessment, and review of current school practices. Intended for teacher paraprofessionals, but may also be used for transfer to a teacher certification program. (F, Sp, Su)  

EDUC 230 Intro to Special Education  
Prerequisites: Reading Level 5 and Writing Level 6  
An introduction to special education for potential elementary or secondary teachers and teacher paraprofessionals. The physical, social, emotional and cognitive characteristics of special needs students are defined. Emphasis is placed on educational interventions and assessment in grades K-12. Some school visits may be required. (F, Sp, Su)  

ELCT - Electrical Technology  

ELCT 101 Schematic Drawing  
Prerequisites: Reading Level 5 and Department Approval  
A nonmathematical beginning course in electronics covering electronic component recognition, reading schematics, freehand and computer drawing of schematic diagrams, and relating schematic diagrams to electronic circuits. (F, Sp, Su)  

ELCT 131 Digital Basics  
Prerequisites: Reading Level 5 and Department Approval  
Introduces digital electronics microprocessor basics. Binary number system, basic gates, formation and sequential logic circuits, programming of a microprocessor using mnemonics and addressing modes. Laboratory work includes the analysis of digital circuits built on PC boards and the programming, debugging and interfacing of a MPU trainer to several IO devices. (F, Sp, Su)  

ELCT 160 Logic Problems Analysis  
Prerequisites: Reading Level 5 and Writing Level 2 and Math Level 4  
Recommended: Math Level 5  
A fundamental analysis course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree Program. Course topics include manipulation of formulas used in electronics, basic gate operation, truth tables, Boolean algebra, binary, octal and hexadecimal base number systems. (F, Sp)  

ELCT 161 Soldering/Desoldering  
Prerequisites: Department Approval  
A basic soldering course. Topics include soldering electronic components in printed circuit boards and surface mount soldering. Desoldering components using solder wave, vacuum desoldering tools and equipment and printed circuit board repair. Students assemble a digital multimeter as a final course project. (F, Sp, Su)  

ELCT 170 Computer Repair Electronics I  
Prerequisites: Reading Level 5 and Writing Level 2 and Math Level 4  
Recommended: ELCT 160 or Math Level 5  
A basic electronics course intended for students in the computer repair certificate and associate degree programs. This course begins with basic electricity concepts and discusses basic electricity, basic electronics, electric circuits, diodes, transistors, digital devices, and digital circuits. (F)  

ELCT 171 Computer Repair Electronics II  
Prerequisites: ELCT 170 2.0 minimum  
A basic electronics course intended for students in the computer repair certificate and associate degree programs. Course topics include electronic, magnetic and optical memory, microprocessors, I/O devices, computer system operation, and an introduction to data communications and LANs. (Sp)  

ELCT 175 Computer Troubleshooting  
Prerequisites: ELCT 171 2.0 minimum or Concurrently  
This is a troubleshooting and repair course intended for students in the computer repair certificate and computer technician associate degree programs. Course topics include basic troubleshooting techniques, unit and board swap computer troubleshooting, and computer preventive maintenance. (Sp)  

ELCT 180 Computer Test Equipment I  
Prerequisites: Reading Level 5 and Writing Level 2  
A basic test equipment course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree Program. This course introduces the student to the operation of electronics test equipment including VOM, DMM, oscilloscopes, storage oscilloscopes and basic digital test equipment. (F)  

ELCT 181 Computer Test Equipment II  
Prerequisites: (ELCT 171 2.0 minimum or Concurrently) or (ELCT 131 2.0 minimum and ELCT 110 2.0 minimum)  
Intended for students in the computer repair certificate and the computer technician associate degree programs. Topics include the computer POST test, software diagnostic programs, hardware diagnostic cards, and other computer troubleshooting equipment. (Sp)  

ELCT - Electrical Technology  

ELTE 100 Electrical Safety Practices  
Prerequisites: None  
This course covers basic electrical safety practices in the home, electrical laboratory and in construction and industry. Included are state and federal standards and practices. This course is a prerequisite for, or to be taken concurrently with, all ELTE courses that have a lab. (F, Sp, Su)
ELTE 110 Practical Electricity
Prerequisite: ELTE 100 2.0 minimum or Concurrently and Reading Level 3 and Writing Level 2 and Math Level 3
This course introduces the student to electricity on a practical level. The student will learn to use meters to measure electrical quantities, dc circuit calculations, install basic household electrical wiring and investigate the behavior of motors and transformers. Reviews electrical codes and standards. This course is also available in an open-entry self-paced, modularized format. (F, Sp, Su)

ELTE 111 Intro Industrial Automation
Prerequisite: Reading Level 3
This course provides a hands-on introduction to current manufacturing technology. Students will learn to use the MS/PC DOS computer including word processor, spreadsheet and operating system applications. Students will experience the use of industrial robots, programmable logic controllers, machine vision, computer-aided design, discrete electronic components and statistical process control. (F, Sp, Su)

ELTE 112 Basic Wiring Installation
Prerequisite: ELTE 110 2.0 minimum or HVAC 110 2.0 minimum
This course covers installation of a variety of wiring systems in wood frame and masonry construction. Students will practice installing nonmetallic sheathed cable, flexible metal conduit, electrical metallic tubing and rigid conduit. (F, Sp, Su)

ELTE 121 Analyzing Electric Circuits
Prerequisite: ELTE 110 2.0 minimum and (MATH 050 2.0 minimum or Math Level 4)
This course utilizes concepts in basic algebra, vector algebra and trigonometry to solve DC and AC electric circuit problems. Topics will include units, Ohm's law, network analysis, series parallel and combination DC and AC circuits, inductance and capacitance. (F, Sp)

ELTE 122 Industrial Control Electronics
Prerequisite: ELTE 121 2.0 minimum and ELTE 111 2.0 minimum (previously ELTE 105)
This course introduces the student to solid-state circuitry used in industry. Students will study diodes, transistors, SCRs, triacs, optical isolators, transistors, 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
Prerequisite: ELTE 121 2.0 minimum
This course begins with three-phase circuits, including three-phase power measurement. Contains practical introduction to single- and three-phase transformers, motors and alternators. Brief coverage of DC machines. (F)

ELTE 131 Intro to Machine Control
Prerequisite: ELTE 110 2.0 minimum
Covers relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Laboratory exercises include wiring three-phase motor control circuits utilizing two- and three-wire control and machine control circuits utilizing limit and proximity switches, timers, relays, etc. (F, Sp)

ELTE 141 National Electrical Code I
Prerequisite: ELTE 110 2.0 minimum or HVAC 110 2.0 minimum
An introductory course designed for individuals with little or no knowledge of the Electrical Code. Students will study the structure and scope of the National Electrical Code and learn how to locate often used code sections. Ohm's law, voltage drop, wire and conduit sizing and installation methods. (F, Sp)

ELTE 142 National Electrical Code II
Prerequisite: ELTE 141 2.0 minimum
This course is for individuals with field experience and basic electrical training who need a review for the State Journey Examination. Students will review the Code with focus on locating and interpreting the National Electrical Code. In addition to the NEC, State of Michigan electrical rules will be reviewed. (F, Sp)

ELTE 143 National Electrical Code III
Prerequisite: ELTE 142 2.0 minimum
For individuals with a journeyman electrician's license who need to review for the State Master's Exam. Students will cover the Code using the index method, discuss interpretation of the Code, study State of Michigan electrical and construction code rules and discuss topics appropriate to the Electrical Contractors Exam. (F)

ELTE 145 Electrical Print for Building
Prerequisite: ELTE 141 2.0 minimum
Recommended: ELTE 121 2.0 minimum or Equivalent
Covers construction prints emphasizing standard and nonstandard symbols and interpretation of prints. Uses the National Electrical Code to calculate branch circuit, feeder, motor circuit and service sizes. Other topics include uninterruptible power supplies, signaling and safety systems. (Sp)

ELTE 150 Electric Motor Maintenance
Prerequisite: ELTE 110 2.0 minimum or HVAC 110 2.0 minimum
Students learn to diagnose and test electric motors. Students will learn to identify and repair common problems in motors using motors, test equipment and appropriate tools. An introduction to rewinding and metal working procedures is also included. (F, Sp)

ELTE 232 Industrial Control Design
Prerequisite: ELTE 121 2.0 minimum
This course is a continuation of ELTE 131, covering more components and larger more complex machine control diagrams; including automation interfacing and automatic continuous cycling of machinery. Students will be taught to design the control circuits for more complex machines in conformance with industry standards. (Sp)

ELTE 240 Electrical Estimating
Prerequisite: ELTE 112 2.0 minimum and ELTE 145 2.0 minimum
Basics of preparing accurate, competitive electrical estimates for the building trades. Topics include take-off procedure using electrical, mechanical and architectural prints; lighting design; labor and materials cost and evaluation techniques and specifications. Students should have wiring experience, practice in the use of NEC rules and electrical prints before enrolling. (F)

ELTE 290 Intro/Programmable Controllers
Prerequisite: ELTE 131 2.0 minimum
This course covers programmable logic controllers with focus on common operating principles. Topics include the capabilities, similarities and differences among controllers, programming (examine overlay, timers and counters) and connecting external devices to Allen-Bradley, Modicon and Omron. (F)

ELTE 291 Allen-Bradley PLC-5 Advanced
Prerequisite: ELTE 290 2.0 minimum
This course covers programming and connections for Allen-Bradley PLC-5 controllers. Focus on math, subroutines, fice, block transfer, sequencers, logic and bit manipulation instructions. Students will learn logic for machine control, programming and utilizing intelligent cards, ASCII, analog input/output and system documentation. (Sp)

ELTE 291 Project Lab
Prerequisite: Department Approval
A guided study of topics of interest in electrical technology. The student will prepare a summary report of activities and demonstrate results of laboratory experience. (F, Sp, Su)

EYMS - Emergency Medical Services

EMSA 100 First Aid and CPR
Prerequisite: None
Designed to provide the knowledge and skills necessary to respond to and treat emergency situations until professional medical help is obtained. First aid and CPR certificates issued upon successful completion. (F, Sp, Su)

EMSB - Emergency Medical Services Seminars

EMSB 102 CPR for Health Care Prof
Prerequisite: None
This seminar is designed for CPR instruction of health care providers and adheres to American Heart Association guidelines. Content includes one- and two-rescuer CPR, child and pediatric CPR, adult, child, pediatric foreign body airway obstruction, information about heart disease, risk factors, and physiology of the heart and lungs. (F, Sp, Su)

EMSB 103 CPR Recertification
Prerequisite: Department Approval
This seminar is designed for CPR instruction for individuals who have previously obtained training in the basics of cardiopulmonary resuscitation and foreign body airway obstruction. The participants must have a current provider card for CPR. The curriculum and testing consists of recertification techniques for CPR. (F, Sp, Su)

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EMSB 104 – ENGL 203

EMSB 104 CPR Instructor .75
Prerequisite: None
The CPR Instructor's seminar is to provide the opportunity and forum to acquire knowledge and skills to accurately instruct and test the Basic Life Support Provider's course according to American Heart Association guidelines. (F, Sp, Su)

EMSB 106 Infant/Child CPR .25
Prerequisite: None
This seminar provides instruction of CPR for special situations or groups, infant and child CPR and foreign body airway obstruction for babysitters and parents would fail under this curriculum. (F, Sp, Su)

EMSB 107 First Aid CPR Serv/Daycare Prov .6
Prerequisite: None
This seminar is intended for daycare providers to meet the requirements of the Department of Social Services to maintain Daycare Licensure. It will provide eight hours of instruction in basic first aid and infant/child CPR with foreign body airway obstruction. (Su)

EMSB 110 First Aid and CPR Seminar .5
Prerequisite: None
This seminar offers adult CPR including airway obstruction and four hours of basic first aid. National Safety Council certification is given to those successfully completing both components. (F, Sp, Su)

EMSB 120 Self-Paced CPR Rifles Hlth Prv .5
Prerequisite: Department Approval
This self-paced course is designed to provide healthcare professionals with greater flexibility in renewing their CPR certification. This course adheres to the American Heart Association guidelines and will test the individual on one- and two-rescuer CPR, adult, child, and infant CPR, and foreign body airway obstruction through the use of a computerized mannequin and laptop system. (F, Sp, Su)

EMTA - Emergency Medical Technology

EMTA 100 Medical First Responder .4
Prerequisite: None
This course will provide the student with the knowledge and skills necessary to manage ill or injured victims at the scene of an emergency until the arrival of ambulance personnel. Successful completion enables the student to apply for state licensure as a medical first responder. (F, Sp, Su)

EMTA 101 Basic EMT I .4
Prerequisite: Reading Level 5 and Writing Level 6
Co-requisite Course(s): EMTA 102
First in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including airway management, patient assessment, CPR, soft tissue injuries, head, chest, and abdominal injuries, and proper use of equipment in the delivery of basic emergency care. (F, Sp, Su)

EMTA 102 Basic EMT II .2
Prerequisite: None
Co-requisite Course(s): EMTA 101
Second in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on practical skills including patient assessment, bandaging, splinting, backboarding, oxygen delivery equipment, CPR, and airway management in the delivery of basic emergency care. (F, Sp, Su)

EMTA 103 Basic EMT III .4
Prerequisite: EMTA 101 3.0 minimum and EMTA 102 3.0 minimum
Co-requisite Course(s): EMTA 104 and EMTA 112
The third in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including the recognition and management of environmental and medical emergencies, verbal, written, and radio communications; triage, emergency childbirth; and pediatric emergencies. (F, Sp, Su)

EMTA 104 Basic EMT IV .2
Prerequisite: EMTA 101 3.0 minimum and EMTA 102 3.0 minimum
Co-requisite Course(s): EMTA 103 and EMTA 112
The fourth course in a sequence of five to prepare the student as a basic EMT. Emphasis is placed on the overall delivery of basic emergency care through simulated emergencies. Successful completion of this course and EMTA 101, EMTA 102, EMTA 103, & EMTA 112 enables the student to apply for licensure as a basic EMT. (F, Sp, Su)

EMTA 105 Ambulance Driving .1
Prerequisite: None
This is 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 112 Basic EMT Clinical .2
Prerequisite: EMTA 101 3.0 minimum and EMTA 102 3.0 minimum
Co-requisite Course(s): EMTA 103 and EMTA 104
The fifth course in a sequence of five to prepare the student as a basic EMT. Includes required OSHA standards, hospital clinicals, ambulance clinicals, and a community service component. Classroom time enhances assessment, history taking skills, and report writing. (F, Sp, Su)

EMTA 114 Rescue/Extrication/Danger Situ .3
Prerequisite: None
A course to provide EMTs and rescue personnel with skills in light and heavy vehicle extrication, industrial rescue techniques, extrication from farm machinery, and other specialized rescue techniques. Emphasis is placed on patient and rescuer safety. (F, Sp)

EMTA 222 EMS Instructor Coordinator .6
Prerequisite: Department Approval
A Michigan Department of Consumer & Industry Services approved course for EMT personnel interested in becoming an instructor coordinator. Includes teaching and testing methods, lesson plan development, writing performance objectives, course administration, MODUS application for course approval, and meeting state requirements. Student teaching required. (Su)

ENGL 122 Writing: Literature and Ideas .4
Prerequisite: WRIT 121 2.0 minimum or WRIT 151 2.0 minimum or (Reading Level 5 and Writing Level 8)
An alternative to WRIT 122, ENGL 122 introduces the students to various literary forms and develops analytical skills in reading, writing, and research techniques. Writing assignments begin with short essays and conclude with an extensive literary research paper. (F, Sp, Su)

ENGL 130 Honors Writing: Literature and Ideas .4
Prerequisite: WRIT 121 3.5 minimum or WRIT 131 3.5 minimum
An alternative to WRIT 122, ENGL 130 is an introduction to various literary forms, in addition to the development of analytical reading and writing skills and research techniques leading to a literary research paper. (Same as ENGL 122 but taught on an advanced level.) (Sp)

ENGL 201 Introduction to Poetry .4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: [WRIT 121 or WRIT 131] and ENGL 122
An introduction to the content, form, style, and technique of poetry; its structural types: metrical, blank, and free verse; its thematic types: lyric, narrative, and dramatic; and its effects or purposes. The course emphasizes poetry written in English but includes English translations of representative poetry from other languages and cultures. (F, Su)

ENGL 202 Introduction to Drama .4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: [WRIT 121 or WRIT 131] and ENGL 122
Introduces drama and its literary techniques and conventions. Attention is given to principles and theory, but understanding of the plays is emphasized. Representative plays from Greek, European, English, and American dramatics. (Sp)

ENGL 203 Introduction to Prose .4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: [WRIT 121 or WRIT 131] and ENGL 122
This course introduces students to selected prose genres that have evolved in cultural history. Students consider how different forms reflect the diverse functions of language in developing human societies. In addition to essays, novels, and short stories, works studied may include folk tales, opisthes, prose poems, (auto)biographies, essays, or documentaries. (F)

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ENGL 205 - The Power of Autobiography

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
Autobiography writing which includes letters, journals, and diaries, is the focus of this special seminar on prose literature. Works to be read chronicle the writer's life, ideas, historical, social, and political life transformations experienced by notable twentieth century figures. Course emphasis is on the power of the personal narrative as literature. (F)

ENGL 206 - Children's Literature

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
The course offers a survey of children's literature, from fairy tales to young adult novels. Students will be introduced to a variety of literary genres in classic and contemporary works. Students will experience the literature through writing, discussion, oral or dramatic presentations, and other means suitable to classroom practice. (Sp)

ENGL 211 - World Literature I

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
A selective survey of the literatures of major world cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe from approximately the 17th century to the present. Explores the historical, cultural, or thematic elements of their respective cultures through narrative prose fiction, poetry, and drama. (F)

ENGL 212 - World Literature II

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
A survey of the literatures of major world cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe from approximately the 17th century to the present. Explores the historical, cultural, or thematic elements of their respective cultures through narrative prose fiction, poetry, and drama. (Sp)

ENGL 220 - Science Fiction

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
ENGL 220 is an introductory course which explores significant issues in science fiction. Novels and/or stories will be the main focus, although works from other media also may be studied. The course's emphasis transcends entertainment to include understanding, interpretation, and analysis as well. (F)

ENGL 240 - The Film as Art

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
This course will introduce film as an art form capable of making perceptive comments on our civilization. Theoretical analysis of 12 to 15 motion pictures of recognized merit will emphasize the filmmakers' visual and aural techniques as well as conventions more commonly associated with literature. (Sp, Su)

ENGL 245 - Popular Culture and Mass Media

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
A study of the popular culture distributed by mass media (newspapers, radio, film, television, magazines, and music videos) and how the media and popular culture reflect and shape our cultural beliefs. Extensive use of multimedia. (F)

ENGL 255 - American Literature I

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
Provides a perspective on the evolution of American literature beginning with the writings of the first European explorers and Native American oral traditions. Features selected essays, autobiographical writings, poems, fictions, and dramas from the mid-18th century to 1865, including the work of women and ethnic minorities, which have contributed to American thought. (F)

ENGL 256 - American Literature II

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
Provides a perspective on the further development of American literature from 1865 (the Realism period) to contemporary literature. Features selected essays, autobiographical writings, poems, fictions, and dramas from the end of the Civil War to the literature of the late 18th and early 19th centuries, including the work of women and ethnic minorities, which have profoundly shaped American literature. (Sp)

ENGL 259 - African-American Literature

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
This course introduces the African-American literary tradition as seen in literature of the Americas, including the Caribbean. Selections explore the Black experience in autobiography, essay, fiction, poetry, and drama. Themes of slavery, colonialism, and the Black Diaspora are discussed. Reading selections include Harlem Renaissance and contemporary texts. (Sp)

ENGL 255 - Japanese Literature

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
Arranged chronologically, this course surveys poetry, prose, and drama of the major Japanese writers from Chosun (14th Century) to the Satirists (19th Century). The works are selected to reflect the attitudes and values of Japanese culture and the perception of the world from a British point of view. (F)

ENGL 257 - British Literature I

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
British Literature I surveys the poetry, prose, and drama of the major British writers from Chosun (14th Century) to the Satirists (19th Century). The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (Sp)

ENGL 270 - Literature by Women

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
A study of selected works by English and North American women writers. Designed to increase understanding of the themes, images, issues, and modes of expression of women writers. (Sp, Su)

ENGL 290 - Shakespeare

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: (WRIT 121 or WRIT 131) and ENGL 122.
Shakespeare studies will include a selection of comedies, histories, tragedies, and romances written by Shakespeare. To better understand how Shakespeare's work continues to influence literature and the arts, the class may also screen film versions of modern retellings of Shakespearean plays. (Sp, Su)

ENGL 295 - Independent Study in English

Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students must earn at least 2 hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

ENRI - Enrichment

ENRI 105 - Life Learning Portfolio

Prerequisite: Reading Level 5 and Writing Level 6 and Department Approval
This course provides the opportunity for students to create a portfolio to document learning acquired through work, volunteer, and/or life employment experience. The finished portfolio can then be submitted to the LCC Registrar's Office to request official credit for knowledge and skill—learning outcomes—that correspond to LCC courses. (Sp)

ENVR - Environmental Science

ENVR 121 - Environmental Rules and Regs

Prerequisite: Reading Level 5 and Writing Level 4
Overview of federal and state environmental regulations and agency rules that regulate discharges to air, water, and land. Laws are examined with respect to the reason the regulation is needed, what the law does, and how it does it. The course is designed for students pursuing careers as environmental technicians. (Sp)
ENVR 122 - ENVS 122 - Enviro Smpfl & Instrumentation
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 5
An introduction to sampling and monitoring procedures and instrumentation to accomplish a task. Students will learn to take samples from ground water, surface water, air, and soil. This course is designed for students pursuing careers in biological science, but emphasizes the skills used by environmental technicians. (F)

ENVR 131 - Industrial Process Safety
Prerequisite: Reading Level 5 and Writing Level 4
Introduction to general manufacturing processes with emphasis on waste reduction and pollution prevention strategies. Case studies of basic processes, materials flow, worker health and safety, waste reduction, and pollution prevention will be examined. Fundamentals of toxicology, epidemiology, and environmental health will be used in understanding workplace safety and health issues. (Sp)

ESLP - English as a Second Language

ESLP 014 - Integrated Skills I
Prerequisite: Placement Test
Designed for high beginning level non-native speakers of English who have basic literacy skills. Emphasis on reading and vocabulary, skill-building activities designed to prepare students for future academic success. Integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 015 - ESL Writing Skills I
Prerequisite: Placement Test
Designed for high beginning level non-native speakers of English who want to improve their ability to write paragraphs. Students learn simple and progressive verb forms in the present, past and future tenses. A process approach to writing is used and students are introduced to basic word processing skills. (F, Sp)

ESLP 016 - Communication Skills I
Prerequisite: Placement Test
Designed for high beginning level non-native speakers of English. Students build awareness of American English pronunciation and focus on troublesome pronunciation features; students practice speaking English and improve basic listening comprehension in a variety of contexts, including academic, social, and professional settings. (F, Sp)

ESLP 024 - Integrated Skills II
Prerequisite: ESLP 011 2.5 minimum or ESLP 014 2.5 minimum or Placement Test
Low intermediate level integrated skills course or non-native speakers of English. Emphasis is on reading and vocabulary skill-building activities designed to prepare students for future academic success. An integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 025 - ESL Writing Skills II
Prerequisite: ESLP 012 2.5 minimum or ESLP 015 2.5 minimum or Placement Test
Designed for low intermediate level non-native speakers of English. Students progress from writing paragraphs to writing academic style essays and use basic word processing skills. Grammatical structures work on include the simple and perfect verb tenses, sentence combining, and recognizing sentence fragments. A process approach to writing is used. (F, Sp)

ESLP 026 - Communication Skills II
Prerequisite: ESLP 012 2.0 minimum or ESLP 016 2.0 minimum or Placement Test
Designed for low intermediate level non-native speakers of English. Instruction focuses on the features of American English pronunciation, as well as improving listening comprehension and oral communication through functional situations, such as role plays, discussions, and informal reports. (F, Sp)

ESLP 034 - Integrated Skills III
Prerequisite: ESLP 021 2.5 minimum or ESLP 024 2.5 minimum or Placement Test
Designed for high intermediate level non-native speakers of English. Emphasis is on reading and vocabulary skill-building activities designed to prepare students for future academic success. An integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 035 - ESL Writing Skills III
Prerequisite: ESLP 022 2.5 minimum or ESLP 025 2.5 minimum or Placement Test
Designed for high intermediate level non-native speakers of English. Students write essays using a process approach to writing. Grammatical structures work on include parts of speech, vocabulary usage, compound and complex sentences, and correct usage of all verb tenses, including perfect tenses. Students use word processing skills. (F, Sp)

ESLP 036 - Communication Skills III
Prerequisite: ESLP 023 2.0 minimum or ESLP 026 2.0 minimum or Placement Test
Designed for high intermediate level non-native speakers of English. Instruction focuses on improving listening comprehension and oral communication skills through group discussions, oral presentations, and projects. Grammar instruction is integrated into the themes for each unit. (F, Sp)

ESLP 100 - Computer Literacy ESL Students
Prerequisite: None
Recommended: ESLP 025, 035, or 115 Concurrent or Equivalent
For English as a Second Language students with little or no previous experience using computers. Students will learn vocabulary for the parts of the computer and for performing basic functions. By the end of the course, students will be able to perform basic word processing skills. (F, Sp, Su)

ESLP 103 - Focus on Pronunciation
Prerequisite: ESLP 030 2.0 minimum or ESLP 039 2.0 minimum or Placement Test
This course is designed for advanced level non-native speakers of English who wish to improve the intelligibility of their speech. Students will have an individual speech profile. Emphasis will be on building awareness of and practicing American English stress, intonation, and rhythm patterns, and clear pronunciation of individual sounds. (F, Sp, Su)

ESLP 110 - Bridge to Academic Reading
Prerequisite: ESLP 031 2.5 minimum or ESLP 034 2.5 minimum or Placement Test
Designed for low advanced level non-native speakers of English needing to prepare for reading college-level texts. Emphasis on building teamwork skills, vocabulary, and developing reading strategies and skills to improve overall comprehension. A basic skill reading level 3 is granted upon successful completion of this course. (F, Sp, Su)

ESLP 113 - Academic Listening/Notetaking
Prerequisite: ESLP 030 2.0 minimum or ESLP 038 2.0 minimum or Placement Test
This course is designed for advanced level non-native speakers of English who wish to pursue an academic degree or transfer program. Emphasis will be on improving overall listening comprehension, identifying the organizational structure of academic lectures, taking effective notes from a variety of sources, and improving vocabulary. (F, Sp)

ESLP 114 - Academic Reading Skills
Prerequisite: ESLP 110 3.0 minimum or Reading Level 3
Designed to prepare advanced level non-native speakers of English for future academic success. Emphasis is on vocabulary building and developing reading strategies and skills, including critical reading for efficient processing of general academic texts. Basic skills reading level 4 is granted upon successful completion of this course. (F, Sp, Su)

ESLP 115 - Composition Academic Purposes
Prerequisite: ESLP 032 2.5 minimum or ESLP 038 2.5 minimum or Placement Test
Designed to prepare advanced level non-native speakers of English for future academic success. Students use a process approach to writing to produce various types of essays using a variety of complex sentences and grammatical structures. Basic writing skills level 4 is granted upon successful completion of this course. (F, Sp, Su)

FASH 120 - Fashion Industry
Prerequisite: None
This course is an introduction to the fashion industry including apparel, textiles, manufacturing, global marketing, merchandising, retailing and e-Commerce. (F, Sp)
FASH 150 Apparel and Textile Design
Prerequisite: None
Recommended: FRT 185 and (CNCP 101 or CIRB 102 or CABS 195) or Concurrently or Equivalent
Students will study the development and production of textile and apparel designs and patterns via selected computer software packages. Implications for use in the textile and apparel industry will be discussed. (F, Sp)

FILM 116 Film Production I
Prerequisite: None
Introduces storytelling practices using moving pictures. Students will learn to plan and produce short movies, and develop basic skills in plot preparation, storyboarding, directing, staging scenes, videography, cinematography, non-linear computer editing, traditional film editing, and audience evaluation. (F, Sp, Su)

FILM 203 Topics in Film/Animation
Prerequisite: None
Provides students with basic photographic skills, an opportunity for intensive study in selected aspects of motion picture production, or multimedia production. (F, Sp, Su)

FILM 220 Screenwriting
Prerequisite: WRIT 121 2.0 minimum or Writing Level 6 Recommended: FILM 118
An introductory course in screenwriting. Students will learn the structure and format of screenplays, including plot development and creation of well-built characters. Real-life considerations of script marketing and relevant practices will also be covered. Those wishing to do advanced work may take an additional semester for credit. (F, Sp)

FILM 226 Film Production II
Prerequisite: FILM 118 2.0 minimum or IMAG 118 2.0 minimum or MTEC 152 2.0 minimum
This is an intermediate-level course that exposes the student to advanced storytelling practices using sound and images. Hands-on production exercises help the student to develop skills in script writing, storyboarding, production planning, photography, animation, editing, and sound track production. Emphasis is placed on Avid nonlinear editing techniques. (F, Sp)

FILM 227 Film Production III
Prerequisite: FILM 118 2.0 minimum or IMAG 118 2.0 minimum
Storytelling practices emphasizing dialog, hands-on production exercises develop skills in script writing, production planning, sound and music recording and editing, and working with actors and crew members. Students work individually and as group members, and apply critical thinking and problem-solving processes to produce effective communications programs. (Sp)

FILM 291 Motion Picture Internship
Prerequisite: FILM 226 2.0 minimum or IMAG 226 2.0 minimum, and (FILM 227 2.0 minimum or IMAG 227 2.0 minimum)
Restriction: Motion Picture Production and Motion Picture Direction Majors
An off-campus field study. Students will gain pre-career experience by working in a motion picture production environment under the supervision of a professional producer or technician. Regularly scheduled progress reports will be given and discussed with a supervising faculty member. Students work a minimum of 160 hours per semester. (F, Sp, Su)

FILM 290 Motion Picture Portfolio
Prerequisite: FILM 226 2.0 minimum or IMAG 226 2.0 minimum and (FILM 227 2.0 minimum or IMAG 227 2.0 minimum)
Restriction: Motion Picture Production and Motion Picture Direction Majors
The student will produce a motion picture, demonstrating technical and creative proficiency, under instructor supervision, suitable for presentation and analysis of the purpose of securing employment. This course is intended to be the capstone course in the Motion Picture Program. (F, Sp, Su)

FIRE 100 Fund of Emergency Services
Prerequisite: Reading Level 5 and Writing Level 4
This course provides an overview to fire protection, career opportunities in fire protection and related fields; philosophy and history of fire protection services; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; and fire service nomenclature. (F, Sp)

FIRE 101 MI F.P.T.C. Basic Fire Lev I
Prerequisite: Admission to Fire Academy and Reading Level 5 and Writing Level 4
Co-requisite Course(s): FIRE 102 and PFCE 114
Level I is basic training required for all firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes the basics of fire suppression, apparatus operation, life safety, and physical fitness. (F, Sp)

FIRE 102 MI F.P.T.C. Basic Fire Lev II
Prerequisite: Admission to Fire Academy and Reading Level 5 and Writing Level 4
Co-requisite Course(s): FIRE 101 and PFCE 114
Level II is basic training required for all career firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes advanced fire suppression, apparatus operation, life safety, and physical fitness. (F, Sp)

FIRE 104 Fire Behavior & Combustion
Prerequisite: FIRE 100 2.0 minimum or Concurrently
This course examines the theories and fundamentals of how and why fires start, spread, and how they are controlled. (Sp)

FIRE 106 Fire/Hydraulics/Water Supply
Prerequisite: FIRE 100 2.0 minimum and (MATH 107 2.0 minimum or Math Level 5)
This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. (F)

FIRE 110 Fire Prevention
Prerequisite: FIRE 102 2.0 minimum or Concurrently or FIRE 101 2.0 minimum and FIRE 102 2.0 minimum
This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with the building fire protection systems, fire investigation, and fire and life-safety education. (F)

FIRE 112 Occup Health & Safety/Fire Svcs
Prerequisite: FIRE 104 2.0 minimum or Concurrently
This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. (F)

FIRE 115 Build Construction/Fire Protect
Prerequisite: FIRE 100 2.0 minimum or Concurrently or FIRE 101 2.0 minimum and FIRE 102 2.0 minimum
This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, planning fire operations, and operating at emergencies. (F)

FIRE 122 Hazardous Materials Chem I
Prerequisite: CHEM 105 2.0 minimum and FIRE 104 2.0 minimum or Concurrently
This course covers basic fire chemistry relating to the categories of hazardous materials including problems with recognition, reactivity, and health encountered by firefighters. (Sp)

FIRE 125 Fire Protection Systems
Prerequisite: FIRE 105 2.0 minimum (previously FIRE 130)
This course provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers. (Sp)

FIRE 150 Strategy and Tactics
Prerequisite: FIRE 104 2.0 minimum
This course provides in-depth analysis of the principles of fire control through the utilization of personnel, equipment, and extinguishing agents on the fireground. (Sp)

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FIRE 210 - Fire Investigation I 4
Prerequisite: FIRE 104 2.0 minimum or Concurrently
This course is intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the firesetter, and types of fire causes. (Sp)

FIRE 215 - Fire Investigation II 3
Prerequisite: FIRE 210 2.0 minimum
This course is intended to provide the student with advanced technical knowledge of fire inspection, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and testifying. (F)

FIRE 220 - Hazardous Materials/Fire Ser 4
Prerequisite: FIRE 210 2.0 minimum and CHEM 133 2.0 minimum
This course explores the concepts and methods of detection, control, and mitigation of hazardous materials incidents. Contains specific elements of NFPA 471, 472 and OSHA CFR 1911.120. (Sp)

FIRE 245 - Fire Officer I & II 4
Prerequisite: FIRE 150 2.0 minimum
This course will introduce the firefighter to the duties assigned to company level officers. Topics addressed in this course include budgeting, planning, public relations, personnel management, communications, legal responsibilities, and safety of the company level. (Sp)

FIRE 250 - Fire Administration I 4
Prerequisite: FIRE 150 2.0 minimum
This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis is placed on fire service leadership from the perspective of the company officer. (Sp)

FIRE 255 - Fire Officer III & IV 4
Prerequisite: FIRE 245 2.0 minimum and FIRE 250 2.0 minimum or Concurrently
This course provides the basic tools for analyzing and evaluating budgets, programs, policies, personnel, and management systems within the fire service organization. Data interpretation and planning are major elements addressed in this course. Enhancement of fire service leadership decision-making capabilities is the primary focus of this course. (Sp)

FIRE 260 - Legal Aspects/Fire Service 4
Prerequisite: FIRE 104 2.0 minimum
This course introduces the federal, state, and local laws that regulate emergency services, national standards which influence emergency services, standard of care, tort and liability. Relevant court cases are also reviewed. (F)

FLNG - Foreign Language

FLNG 295 - Ind Study in Foreign Language 1-4
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

FREN - French

FREN 115 - Conversational French I 3
Prerequisite: None
Students learn how to communicate orally in everyday life situations and in travel abroad. Emphasis is on the development of ability to communicate in French. French culture is explored. (F, Sp, Su)

FREN 116 - Conversational French II 3
Prerequisite: None
Recommended: FREN 115 or Equivalent
Continuation of FREN 115. Designed for advanced beginners who wish to improve their speaking ability in the context of daily living. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation through class discussions conducted in French. Students will continue to explore different aspects of life and culture in the francophone world. (F, Sp, Su)
GEO 221 Physical Geography
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
This course investigates the dynamic physical earth using a cause-effect theme and emphasizes relationships of geologic cycles (tectonic/hydrologic) to modifications of earth's crust (e.g., volcanism, mountain building, rivers, glaciers) with introduction to environmental topics and earth resources. Laboratory includes mineral and rock identification, topographic and geologic map interpretation, and plate tectonics overview. (F)

GEO 222 Historical Geography
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
Plate tectonics is used to integrate crustal and organic evolution in the dynamic global system. Includes methods of geologic inquiry and critical evaluation of evidence. Laboratory stresses interpretation of the rock and fossil records, reconstruction of past ecosystems, geologic maps, and plate tectonics' influence on the environment. (Sp)

GEO 250 Environmental Geology
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
Concepts of physical geography are applied to human interaction with the environment. Geologic resources (e.g., minerals, energy, and water) and hazards (e.g., earthquakes, landslides, and flooding) are explored. Laboratory includes rock and mineral identification, map reading and interpretation, evaluation of land use alternatives, and problem-solving activities related to environmental issues. (F)

GEO - Geontology

GEO 100 Introduction to Human Aging
Prerequisite: Reading Level 5 and Writing Level 4
This course provides a basic orientation to the field of gerontology with emphasis on social aspects: family and social factors. It provides an overview of the service system, the relationship to the broader human services system, and how the services work, can be used, and develop community resources for the benefit of older adults. (F)

GEO 131 Pin for Older Adnts w/Dev Dis
Prerequisite: None
This course presents an overview of the older adult with developmental disabilities including characteristics, demographics, public policy issues, and functional assessment. Michigan program initiatives are discussed and case studies are presented. (F, Sp)

GEO 164 Med & Alcohol Use/Older Adults
Prerequisite: None
This course examines medication and alcohol use among older adults including prescription and nonprescription medicines, side effects, drug interactions, and strategies for using medicines wisely. Students learn to identify a substance abuse situation and how to make appropriate referrals. (F, Sp)

GEO 165 Dementia: Concepts and Causes
Prerequisite: None
This course is an introduction to current concepts of dementia (Alzheimer's disease and related disorders) in older persons. It provides an overview of social, physical, psychological, and environmental factors associated with dementia. Relationships to depression, techniques for communicating with older persons with dementia, family dynamics, and community resources are discussed. (F, Sp)

GEO 169 Legal Rights of Older Adults
Prerequisite: None
This course focuses upon issues such as guardianship, conservatorship, power of attorney, the living will, joint tenancy, nursing home residency, and civil commitment, including actual and perceived choices a person has as aging and illness occur. (F, Sp)

GEO 170 Depression: Recogn & Treatment
Prerequisite: None
This course provides an examination of depression in later life. Symptoms, causes, "mismeasurement," 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)

GEO 171 Tech: Care for Persons w/Demen
Prerequisite: None
This course provides an introduction to techniques for working with older adults with Alzheimer's disease and related disorders. The psychosocial needs of individuals and their families are a primary focus. Communication techniques, problem-solving approaches, handling problem behaviors, a task breakdown environment, adaptations, and roles of the family are discussed. (F, Sp)

GEO 173 Actv: Older Adlts w/Alzheim
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)

GEO 191 Seminar: Special Subjects
Prerequisite: None
This course consists of a series of seminars which address the most current issues in the field of gerontology. The seminars are designed to provide the most up-to-date information on selected, high-interest subjects concerning human aging. (F, Sp, Su)

GEO 203 Physical/mental Health Aging
Prerequisite: GECO 102, 2.5 minimum or Concurrently
Physical and mental health of older adults is examined from an applied perspective for human services providers. Topics include normal and pathological changes; family and social factors; skills and adaptations for maintaining good physical health; assessment; intervention and skills for helping older adults access appropriate treatment in the health care system. (Sp)

GRT - Geographic Information Systems

GRT 203 Beginning MicroStation
Prerequisite: None
Recommended: LAND 232 or Basic CAD Experience
This entry-level, computer-aided design and drafting course uses MicroStation software on an Intergraph workstation or PC. Students will create 2-D drawings using basic graphic tools and procedures. (F, Sp)

GRT 204 MicroStation Graphic Environ
Prerequisite: GRT 203, 2.0 minimum
This course explores the MicroStation graphic environment using the Intergraph Workstation. The analysis package, VEGA, will be utilized as well. The development of a prototype Geographic Information System will be a highlight of this course. (Sp)

GRT 205 Principles Geographic Info Sys
Prerequisite: None
This course describes the components of a basic GIS and how they are assembled. Acquisition of data, maps, and other information used to build a database will be highlighted. A basic pilot project will be demonstrated step-by-step through various applications in GIS. (F, Sp, Su)

GRT 210 Global Positioning Systems
Prerequisite: None
This course covers the basic principles necessary to set up, operate, and run a Global Positioning System (GPS) receiving station, as well as collect information with a receiver. Data collection will be incorporated into a computer database program. The information link with Geographic Information System (GIS) and the use of GPS in GIS will be demonstrated. (F, Sp)

GRT 211 Geocel/internet GIS
Prerequisite: None
This course covers the basics of computer mapping systems and how they relate to computer design, graphics, and GIS. D-Mip, Map Info, and Mapping Office will be presented. Students will produce a variety of maps as they relate to daily activities, land planning, environmental geography, and information systems. (Sp)
GRET 213 - Advanced MicroStation 3
Prerequisite: GRET 203 2.0 minimum
This course is an advanced application of the MicroStation Software and deals
with 3-D and other advanced aspects of this computer-aided drafting and design
package. A basic understanding and/or beginning MicroStation class is necessary
for success in this class. (Sp)

GRET 220 - Hydrological Systems 3
Prerequisite: None
This course will discuss the various aspects of water resources as they pertain to
the geographic information system environments. Water systems, natural and
man-made, will be emphasized. The evaluation, analysis, and environmental
impacts of various water features as they pertain to environmental research and
development will be highlighted. (F)

GRET 221 - Landforms/Soil Systems in GIS 3
Prerequisite: None
This course will discuss the important classifications of landform and soil systems.
The relevance of these systems in the GIS environment will be highlighted. The
importance of these systems in the information processing, land use, land plan-
ning, site design, and landscape form areas will be emphasized. (Sp)

GRET 223 - Environmental Resource Mgmt 3
Prerequisite: None
This course will cover the broad spectrum of environmental resources such as
water, air, land, and ecosystems, vegetation, and their impact and management
in current computer information systems. Resources in the land planning disci-
plines will be highlighted as to their function in the current environmental
processes, both public and private. (Sp)

GRET 240 - Cartography in GIS 3
Prerequisite: None
This course will cover various types of maps. Computer-aided map planning and design
along with how to read, print, and design maps will also be covered. (F)

GRET 241 - Remote Sens/AirPhoto Interpret 3
Prerequisite: None
This course will introduce the development of skills necessary for basic interpreta-
tion of aerial photography data, such as in collection, manipulation, and their
ability to analyze maps created from the data collected in the field. The current technology and GIS
relationship will be highlighted. (Sp)

GRET 243 - ORACLE/Geographic Info Sys 3
Prerequisite: None
This course will cover the components of ORACLE needed to build a database for
GIS applications and to understand how a hands-on computer course. Sample databases will
also be demonstrated. Students will construct several databases that apply to the GIS cov-
erage layers. (F)

GRET 248 - GIS/GPS Field Systems 3
Prerequisite: None
MicroStation Analyst (MGA) is an advanced software package dealing with GIS
systems that will be introduced to the students and will be used in
performing spatial analysis. It will also cover system query suite and answers to
questions posed to spatial analysis. (F, Sp)

GRET 253 - Basics of ARC/View 3
Prerequisite: None
This course is an overview and introduction to the ARC/View software. Also cov-
ered are the basic components of a viewing program and its applications in GIS.
Various demonstrations will be presented and project examples highlighted. (Sp)

Hand-on computer exercises will be completed. (F, Sp)

GRET 255 - Beginning ARC/Info 3
Prerequisite: None
Recommended: Computer Experience
This course will be an introduction to the use of the ARC/INFO software.
ARC/INFO is a leading product used in the design of Geographic Information
Systems. Basic product use and modeling will be demonstrated. There will be
hands-on experience in the lab. (F, Sp, Su)

GRET 256 - Advanced ARC/Info 3
Prerequisite: GRET 255 2.0 minimum
This course advances the techniques acquired in the beginning ARC/INFO class.
The student will learn additional modules and advanced application of modules
such as GHM and TIN. The student will also develop projects using data sets.
Students will develop a complete GIS project utilizing the full ARC/INFO module. (Sp)

GRET 258 - ARCView Extensions G.I.S. 3
Prerequisite: GRET 253 2.0 minimum
This course will cover the basic software extensions to the ArcView package.
Students will learn the basic commands for the various ArcView extensions.
Spatial analysis and network analysis extensions will be highlighted. A GIS project
will be completed utilizing all of the various software packages. (Sp)

GRET 265 - Analysis Applications in GIS 3
Prerequisite: GRET 264 1.0 minimum or GRET 265 1.0 minimum
This course expands upon the techniques, methods, and processes involved in
developing a full GIS program. Different GIS software packages will be explored,
as well as related databases and completed projects. (Sp)

GRET 266 - Project Design in GIS 3
Prerequisite: GRET 264 1.0 minimum and GRET 265 1.0 minimum and GRET
255 1.0 minimum
This course specifically deals with all of the possible application areas for GIS,
both present and future. Project application areas such as toxic materials, traffic
flows, land use, forestry, natural resources, and emergency planning will be high-
lighted. A semester-long application project of your choice will be developed on the
computer. (Sp)

GRET 295 - GRET Project Lab 1-4
Prerequisite: Disposition Approval
This project lab is designed for students who wish to pursue a specialty area in
GIS beyond that which is offered in our curriculum. Inquiry through research and
design is required. (F, Sp, Su)

GRMN 115 - Conversational German I 3
Prerequisite: None
The first course in a two-semester sequence for persons with little or no knowl-
dge of German. Emphasizes listening and speaking skills. Students learn correct
pronunciation, essential language structures, and a practical vocabulary applied in
conversational exchanges. Aspects of German culture are introduced through
multimedia presentations. (F, Sp, Su)

GRMN 116 - Conversational German II 3
Prerequisite: None
Recommended: GRMN 115 or Equivalent
The second course in a two-semester sequence for persons with little or no knowl-
dge of German. Emphasizes listening and speaking skills. Students learn correct
pronunciation, essential language structures, and a practical vocabulary applied in
conversational exchanges. Aspects of German culture are introduced through
multimedia presentations. (F, Sp, Su)

GRMN 121 - Elementary German I 4
Prerequisite: Reading Level 5
First course of a two-semester sequence in elementary German. This course
offers systematic practice in the four basic language skills: listening comprehen-
sion, speaking, reading, and writing. Communicative approach is combined with a
solid grammar foundation, as well as familiarization with contemporary life and cul-
ture in Germany, Austria, and Switzerland. (F)

GRMN 122 - Elementary German II 4
Prerequisite: GRMN 121 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in elementary German. This course
offers more advanced practice in the four basic language skills: listening compre-
hension, speaking, reading, and writing. Communicative approach is combined with
more complex structure as well as familiarization with contemporary life and culture
in Germany, Austria, and Switzerland. (Sp)

GRMN 201 - Intermediate German I 4
Prerequisite: GRMN 122 1.5 minimum and Reading Level 5
First course of a two-semester sequence in intermediate German. Intensive prac-
tice provided in the basic skills: speaking, listening comprehension, reading, and
writing. Emphasis on composition, oral and written grammar, and writing and discussion of
contemporary German films. Class is taught mainly in German and uses
Blackboard technology and Internet searches. (F)
GRMN 202 Intermediate German II  
Prerequisite: GRMN 201 \(1.5\) minimum and Reading Level 5  
Second course of a two-semester sequence in Intermediate German with advanced practice in the basic skills: speaking, listening comprehension, reading, and writing. Includes a review of advanced structures, composition, and viewing and discussion of contemporary German films. Class is taught mainly in German and uses blackboard technology and Internet searches. (Sp, Su)

HEOT 100 Equipment Introduction  
Prerequisite: Department Approval  
This course is intended to give the student an overall review of legal and work responsibilities of an operator of heavy construction equipment. Safety, inspections, and familiarization of equipment and operation standards for all major pieces of equipment will be stressed. (F, Sp, Su)

HEOT 110 Part 10 MOISHA  
Prerequisite: Department Approval  
This course will give the student an overall review of OSHA standards associated with the operation of construction equipment. (F, Sp, Su)

HEOT 120 Backhoe Operator  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to train the student to safely inspect and operate a backhoe under conditions normally found on a job site. (F, Sp, Su)

HEOT 121 Excavator Operator  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to train the student to safely inspect and operate an excavator under conditions normally found on a job site. (F, Sp, Su)

HEOT 122 Wheel Loader Operator  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to train the student to safely inspect and operate a wheel loader under conditions normally found on a job site. (F, Sp, Su)

HEOT 123 Forklift Operator  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to train the student to safely inspect and operate a forklift under conditions normally found on a job site. (F, Sp, Su)

HEOT 130 Motor Grader Operator  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to train the student to safely inspect and operate a motor grader under conditions normally found on a job site. (F, Sp, Su)

HEOT 131 Bulldozer Operator  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to train the student to safely inspect and operate a bulldozer under conditions normally found on a job site. (F, Sp, Su)

HEOT 132 Trenching and Graderwork  
Prerequisite: HEOT 100 \(2.0\) minimum and HEOT 110 \(2.0\) minimum and EMMSA 100 \(2.0\) minimum  
This course is intended to familiarize the student with basic safety practices necessary with trenches and benches and with basic grading and staking. (F, Sp, Su)

HEOT 102 Equipment Hydraulics  
Prerequisite: Department Approval  
Upon completion of this course the successful student will be able to diagnose and repair hydraulic problems found typically on heavy duty construction equipment. (Sp)

HEOT 103 Diesel Fuel System  
Prerequisite: Department Approval  
Upon completion the successful student will be able to diagnose and repair fuel system failures found on heavy diesel engines. (Sp)

HEOT 104 Equipment Powertrain  
Prerequisite: Department Approval  
Upon completion of this course the successful student will be able to diagnose and repair powertrain components in heavy duty equipment. (Sp)

HEOT 105 Equipment Service Writing  
Prerequisite: Department Approval  
Upon completion the student will be able to make repair estimates on a disabled piece of construction equipment. (Sp)

HEOT 210 Heavy Equip Internship  
Prerequisite: Department Approval  
Students earn credits while employed performing duties associated with the heavy equipment operator or repair technician occupations. The student will work under the general supervision of an experienced equipment operator or repair technician and will learn current industry practices. The program coordinator must approve the training site and working conditions. (F, Sp, Su)

HIST 150 African-American History  
Prerequisite: Reading Level 6  
Traces the developments which led to the African slave trade, the slave systems in North and South America, the cultural heritage of the African American in the Americas, and the problems of race in North American culture. (Sp)

HIST 210 Studies in American History  
Prerequisite: Reading Level 5  
Covers problems of research, writing, philosophy, and interpretation of history, involving a detailed examination of a particular area of American History. (Su)

HIST 211 U.S. History to 1877  
Prerequisite: Reading Level 5 and Writing Level 6  
A political, legal, economic, social and cultural history of the United States from colonial beginnings to 1877. (F, Sp, Su)

HIST 212 U.S. History: 1877 to Present  
Prerequisite: Reading Level 5 and Writing Level 6  
A political, legal, economic, social, and cultural history of the United States from the end of reconstruction to the present. (F, Sp, Su)

HIST 214 African History  
Prerequisite: Reading Level 5 and Writing Level 6  
Surveys African history with emphasis on pre-colonial and colonial Africa, nationalism and the struggle for independence, colonialism and economic development, underdevelopment, and cultures and traditions as factors in development. Covers some of these topics in three other countries of the Third World (e.g., Brazil, Pakistan, and Indonesia). (F)

HIST 220 Michigan History  
Prerequisite: Reading Level 5 and Writing Level 6  
Recommended: WRIT 121 or WRIT 131  
A survey of the political, economic, and social development of Michigan from pre-colonial times to the present. (F)

HIST 230 British History  
Prerequisite: Reading Level 5 and Writing Level 6  
Recommended: WRIT 121 or WRIT 131  
A survey of the political, economic, legal, constitutional, and social forces which shaped British history and society from earliest times to the present with special emphasis on the interactions of British and American institutions, values, and ideas. (Sp)
HIST 240 Latin American History
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131
A survey of the history and culture of Latin America from pre-Columbian civilizations to the present. This course will examine political, social, and cultural developments in Latin America and assess the role of colonialism, nationalism, and world economic trends in shaping Latin American countries. (Sp)

HIST 250 History of Modern Asia
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131
This course will survey political, social, and economic developments as well as principal cultural trends in the major civilizations of Asia (excluding Western Asia) from approximately the 17th Century to the present. The course will also include an examination of the interactions among Asian societies and between Asia and the West. (F)

HIST 260 Conflict & Revoil in southern Africa
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131
Study of historical-cultural origins and contexts of conflicts in Zimbabwe and Southern Africa with emphasis on socioeconomic causes of conflicts, cultural differences and conflicts, problems of development as sources of conflicts, inter-African conflicts, inter-African conflicts, international dimensions of conflicts, and solutions to conflicts. (Sp, Su)

HIST 263 Seminar: Modern Russia
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
A survey of Russia and its people from the Russian Revolution of 1917 to the present. Also examined are the multinational character of the former USSR and the forces that shaped Soviet history, society and politics, including Russian relations during the Cold War and after. (Su)

HIST 265 Sem: American Legal Tradition
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
A historical survey of the origins, growth, and development of the American legal-constitutional process. The legal system is studied in the context of American culture by examining the leading cases, philosophies, scholars and institutions, and approaches to the study of law. (SU)

HIST 295 Independent Study in History
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week per each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

HMFS 101 Intro Hospitality/Tourism
Prerequisite: Reading Level 3 and Writing Level 4
Career opportunities in various types of hotels, restaurants and tourism operations are discussed; includes trends and explains the importance of the various segments as they work together to provide quality guest service. (F, Sp, Su)

HMFS 110 Sanitation and Safety
Prerequisite: None
Safe food handling, prevention of food spoilage, and transfer of bacteria, maintenance of equipment and facilities, and importance of good personal hygiene in the workplace are discussed; HACCP explained. OSHA laws described and illustrated. Includes examinations for national and state sanitation. (F, Sp, Su)

HMFS 131 Food and Beverage Management
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: HMFS 110 2.0 minimum
This course provides an overview of food preparation with an emphasis on management issues and quality. It includes laboratory activities to practice safe operation of equipment, and to plan, prepare, serve, and manage complete meals for public consumption. Cost controls, purchasing, and beverage management are discussed. (F, Sp)

HMFS 132 Food Production
Prerequisite: HMFS 110 2.0 minimum or Concurrently and HMFS 131 2.0 minimum
Recommended: Minimum 2.0 in HMFS 101 and HMFS 135
This course presents advanced food preparation techniques with guidelines on organization of food and beverage production. Food purchasing and proper storag prior to production is examined. The course also includes terminology, theory, planning, organization, productivity techniques, costing, purchasing, sales, service, and management of meals for public consumption. (F, Sp)

HMFS 134 Nutrition and Healthy Eating
Prerequisite: None
Eating out safely discussed plus exploration of nutrients and their role in maintaining health. Examination of food patterns, weight control and maintaining a healthy lifestyle with reasonable exercises. Includes nutritional analysis of 24-hour food consumption. (F, Sp)

HMFS 135 Hospitality Purchasing
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: HMFS 131 2.0 minimum
Responsibilities of a purchasing agent and role with vendors in an effective purchasing program are explored; focus on writing specifications, purchasing for all categories of foods and supplies, cutting test procedures and standard receiving practices. Emphasis on how to make effective managerial purchasing decisions. (F)

HMFS 137 Catering Management
Prerequisite: None
Recommended: Minimum 2.0 in HMFS 110 and HMFS 132 and HMFS 135
Sequential steps to successful catering are presented from determining client needs, planning of menus, purchasing, control and pricing events, establishing equipment requirements, examining both on and off-premise functions, recognizing sanitation concerns, and designing contractual agreements with clients. Lab preparation and presentation of a catered event. (Sp)

HMFS 170 Menu Management and Design
Prerequisite: HMFS 131 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in HMFS 101 and HMFS 135
Design a menu using accurate descriptive terms, calculation of selling prices, layout recommended, selection of fonts and colors. Includes analysis of menus including accuracy, truth in menus, the menu as a marketing tool, and current trends. Semester project included. (F)

HMFS 177 Intro Hotel and Food Serv Ops
Prerequisite: None
An introduction to the hotel, motel, food service industry, its management departments, and responsibilities. Designed specifically for Japan Adventure and Japan Horizon students. (F, Sp, Su)

HMFS 190 Internship
Prerequisite: Department Approval
Recommended: Have completed a minimum of 36 credits
This is a hands-on experience in a food service facility, including a supervisor, or travel operation to supplement and illustrate the industry principles, techniques, skills, and practices learned in previous course work. Students will engage in a minimum of 200 hours of approved paid work experience. (F, Sp)

HMFS 203 Hospitality Law
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in HMFS 110 and HMFS 226
Legal problems and issues commonly faced in hospitality operations, including rights and responsibilities of innkeepers, restaurateurs, caterers, and other food establishments, guest relationships, guest property rights, frauds, employment, safety, tax and liquor laws. Current court cases discussed. (Sp)

HMFS 204 Hospitality HR Management
Prerequisite: None
Recommended: HMFS 101 and HMFS 170 and HMFS 203
Supervisor's role as a leader, coach and personnel manager; topics include managing culturally diverse workers plus recruitment, selection, orientation, training, evaluating, and disciplining employees. Discussion on retaining employees, sexual harassment, and worker motivation. (F, Sp)

HMFS 205 Hospitality Management
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in HMFS 131 and HMFS 203 and HMFS 204
A survey of management principles and practices in the hospitality industry. Topics include basic financial statements, operating ratios, planning, organizing, directing and controlling related to lodging and food service operations. (F, Sp)
HMFS 206 Rooms Division Management 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Reservation and sale of hotel rooms, operation of front office, review of check-in and check-out procedures, credit card processing, property security, daily audit and the importance of keeping accurate records. Includes yield management and estimating room rates. Forecasting based on statistical analysis, posting accounts and budgeting. (Sp)

HMFS 215 Hospitality Sales/Marketing 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in (HMFS 131 and/or HMFS 206) and HMFS 170
Design and evaluation of sales promotions, strategic marketing plans and marketing alternatives: includes techniques for market analysis, needs assessment and creation of packages and joint ventures such as co-branding. Trends in branding and methods to evaluate marketing effectiveness will be discussed. Project included. (F, Sp)

HMFS 229 Convention/Meeting Management 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in (HMFS 131 and/or HMFS 206) and HMFS 170
Determining client needs, evaluating capability of facility and community resources and marketing for convention business is included. Methods of evaluating successful conventions and meetings are examined and the use of software programs to book events and maintain client records. (Sp)

HMFS 232 Food and Labor Cost Control 3
Prerequisite: HMFS 131 2.0 minimum or Concurrently and (HMFS 207 2.0 minimum or ACCT 101 2.0 minimum) or Concurrently and Math Level 2
Recommended: Minimum 2.0 in HMFS 204 and HMFS 205
Strategies for making a profit and controlling food, beverage, and labor costs are examined. Includes discussion of quality versus cost issues and an analysis of records to detect problems. Includes examination of facility management strategies to reduce costs and save energy. Methods for increasing revenues are discussed and evaluated. (F, Sp)

HMFS 240 Current Topics in Hospitality 3
Prerequisite: HMFS 101 2.0 minimum
Recommended: Minimum 2.0 in HMFS 203 and HMFS 206 and HMFS 215
This course provides an examination of current trends, issues and topics affecting the hospitality industry. Each offering will change emphasis with possible topics such as Internet marketing, projected and pending legislation, casino and resort management, technological advancements, facilities management, leadership development, and industry globalization. (F, Sp)

HMFS 251 Wine Appreciation 1
Prerequisite: Must be 21 Years of Age
Selection and storage of five basic wine types, how they are made and served; evaluation of wines based on appearance, bouquet and taste. Discussion on food compatibility with comparative taste evaluations. (F, Sp)

HMFS 252 Wines of America 1
Prerequisite: Must be 21 Years of Age
A study of the wine making industry in America with emphasis on wines from California, New York, Michigan and Ohio. Comparative taste evaluations and discussion of food compatibility. (F)

HMFS 253 Wines of France 1
Prerequisite: Must be 21 Years of Age
Examine, in depth, the history and regional differences exhibited by the major wine producing areas of France - the world's leader and most famous wine producer. Through tasting, students will travel through the regions of Bordeaux, Burgundy, Champagne, Alsace, Rhone, and Lorraine Valley. (Sp)

HMFS 254 Mixology 4
Prerequisite: None
More than bartending; includes accuracy and efficiency in preparation of many mixed beverages that are explained and demonstrated; includes strategies for controlling over and under pouring, bar management, and theft. Industry standards explained (glassware, garnishing, and service) with emphasis on sanitation issues. Student preparation in laboratory setting. (F, Sp, Su)

HMFS 260 Gourmet Basic Cookery 2
Prerequisite: None
Recommended: HMFS 110
Beginning basics of menu planning, recipe selection, purchasing of ingredients, correct preparation and service. Cost issues and sanitation concerns emphasized. Preparation and evaluation of meals included. (F, Sp)

HMFS 261 Gourmet Italian Cookery 2
Prerequisite: None
Recommended: HMFS 110
Regional and national foods from Italy with specialty menus from each major region. Meal planning, food purchasing, and food preparation included. Local community experts contribute their expertise to the class. Preparation and evaluation of meals included. Opening and closing kitchen procedures practiced. (F, Sp)

HMFS 263 Gourmet American Cookery 2
Prerequisite: None
Recommended: HMFS 110
Explore why the U.S. is considered the "Melting Pot" of the world. During this course, you will travel through 8 different regional cuisines. Sanitation, nutrition, and personal hygiene are essential topics, along with various kitchen safety practices. (F, Sp, Su)

HMFS 264 Gourmet Barbecue Cookery 2
Prerequisite: None
Recommended: HMFS 110
Innovative approaches to preparing flavorful grilled foods; includes meats, vegetables, herbs, sauces, plus salads and desserts. Learn how to create memorable pitcooks. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp, Su)

HMFS 265 Gourmet Chinese Cookery 2
Prerequisite: None
Recommended: HMFS 110
Learn basic techniques in the preparation of popular favorites such as sweet and sour pork, chicken almond ding and egg rolls; emphasis on proper sauce methods and "red" cooking techniques. Preparation and evaluation of meals included for diverse taste, texture, and aroma; opening and closing kitchen. (Sp)

HMFS 266 Gourmet Middle Eastern Cookery 2
Prerequisite: None
Recommended: HMFS 110
Unique ingredients and preparation procedures from various Middle Eastern countries are examined and explained. Includes preparation of entrees, side dishes, and desserts followed by detailed evaluations as to quality and customer acceptability. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Su)

HMFS 269 Vegetarian Cuisine 2
Prerequisite: None
This course will examine the growing trend of vegetarian cookery and how it has evolved over the years. Information will be provided on the different types of vegetarian cuisines, as well as how this has impacted today's lifestyles. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)

HMFS 272 The Cuisine of India 2
Prerequisite: None
This course is designed to explore foods from India, including an introduction to Indian cuisine, its history, indigenous foods, herbs and spices used, and geography. Indian cuisine has a very rich history. Its taste is varied by region being simple, flavorful, colorful, and at times very intense. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)

HMFS 273 Gourmet Cajun Cookery 2
Prerequisite: None
Recommended: HMFS 110
Louisiana is home of Cajun and Creole cooking. Learn how to prepare a variety of recipes from this popular cuisine utilizing different herbs, spices, and techniques. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (Sp)

HMFS 274 Gourmet Lean Cookery 2
Prerequisite: None
Recommended: HMFS 110
Healthy ingredient alternatives examined to reduce the fat, salt, and calories in preparation of a variety of favorite recipes. Includes discussion of food composition and making healthier food choices through improved purchasing decisions. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)
HMFS 275 – HORT 230

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HMFS 275 Bakery Products

Prerequisite: None
Recommends: HMFS 110
Learn the roles of each baking ingredient, scaling, mixing, and baking techniques to achieve high-quality products. Production of breads, quick breads, pies, cakes, pastries, and cookies made in a commercial bakery. Scratch and convenience lines examined and tested. (F, Sp, Su)

HMFS 276 Ice Carving Seminar

Prerequisite: None
This course is designed to expose the student to the tools, techniques, and skills required to carve a block of ice. The student will be carving from a block of ice before the conclusion of the course. This is a hands-on, one-day course. (F, Sp)

HMFS 280 Food Decorating Garnishes

Prerequisite: None
Recommends: HMFS 110 and HMFS 132
Garnishing and presentation of various cold foods such as canapes, hors d’oeuvres, and vegetable carvings; plus the use of spices, sauces, and dressings. Food sculpting included. Setup of lunch reception included. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (Sp)

HMFS 281 Soups and Sauces

Prerequisite: None
Recommends: HMFS 110 and HMFS 132
Composition of soups, garnishes, and sauces; preparation of soups, garnishes, and sauces. (Sp)

HONR 151 Honors Colloquy 1

Prerequisite: Honors Program Approval
Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write essays resuming each presentation. (F)

HONR 152 Honors Colloquy 2

Prerequisite: Honors Program Approval
Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write three substantive research papers. (F)

HONR 155 Community Service Practicum I

Prerequisite: Honors Program Approval
A practicum course for freshmen students requiring a minimum of 32 hours of volunteer service with a community agency of the student's choice and attendance at three classroom discussion sessions. Students will develop practical skills and evaluate their service in terms of its relevance to the community and their educational career, and life goals. (Sp)

HONR 156 Community Service Practicum II

Prerequisite: Honors Program Approval
This is an opportunity for sophomores Honors Program students to volunteer in a community agency of their choice. Students will develop practical skills and evaluate their service in terms of its relevance to the community and their educational career, and life goals. (Sp)

HONR 155 Honors Independent Study

Prerequisite: Honors Program Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Student spend at least two hours per week on course work. A detailed proposal must be submitted by the student for approval by the Honors Program Director and supervising instructor prior to registration. (F, Sp, Su)

HORT 100 Field Experiences Horticulture

Prerequisite: None
This course introduces the student to various aspects of the horticulture profession. The student will work with local nurseries, landscape designers, and gardeners. (Sp)

HORT 102 Intro Ornamental Horticulture

Prerequisite: None
An introductory course involving basic methods and techniques of plant propagation. Basic plant structures and their functions as well as soil and plant nutrition are discussed. Lab opportunities and the role of horticulture will also be covered. (F, Sp)

HORT 103 Indoor Plants and Flowers

Prerequisite: None
This course introduces the student to the principles and practices of indoor plant care. Students will learn about the care of houseplants and other common indoor plants. (F, Sp)

HORT 105 Pest/Problem Ornamental Plants

Prerequisite: None
This course is for the professional or homeowner interested in a knowledge of basic environmental and pest problems. Basic principles related to light, water, fertilizer, and pests as well as insects, diseases, and vertebrates will be discussed. Integrated pest management and natural pest control methods will be examined. (F, Sp)

HORT 106 Beginning Floral Design

Prerequisite: None
This is an introductory course for students interested in learning the principles of floral design. Tools and techniques will be practiced through hands-on experiences. Students will use fresh, silk, and dried flowers to create traditional and contemporary designs. (F, Sp)

HORT 109 Contemporary Floral Design

Prerequisite: None
Recommends: Basic Floral Design Experience
Contemporary floral designs are taught as well as traditional arrangements, tools, and techniques. The basic principles of design are reviewed with the student transferring these principles to varied arrangements. This is a hands-on class with participants working with floral materials each week. (F, Sp)

HORT 110 Wedding Floral Design

Prerequisite: None
Recommends: Basic Floral Design Experience
This course is designed for the advanced floral designer who has demonstrated the ability to apply the principles of design. The course focuses on the use of flowers, foliage, and other materials. Students will learn about the design, construction, and care of floral arrangements. (F, Sp)

HORT 143 Cut Flower, Foliation, Pol Plant

Prerequisite: None
The functional aspects of plant material commonly found in the horticulture industry will be covered. The identification of cut flowers, foliage, and potted and foliated plants will be required. This course is designed for students who are interested in the floral industry. (F, Sp)

HORT 230 Plant Propagation/Nursery Op

Prerequisite: HORT 102 1.0 minimum
This course covers the basics of plant propagation and nursery operations. It will focus on the process of setup, planning, and follow-up maintenance. The skills and techniques of seed propagation, as well as cutting, grafting, budding, and layering will be emphasized. Knowledge of plant selection, soil, pruning, harvesting, and marketing nursery products will be included. (F)
HORT 235  Greenhouse Structures/Environment  3
Prerequisite: None
This course is an introduction to the construction and operation of a commercial greenhouse. Types of greenhouses, including construction materials, are discussed. Environmental control such as heating, cooling, and irrigation practices and procedures are presented. In addition, methods of planting, fertilizing, and insect and disease control are also included to provide a basis of knowledge for greenhouse crop production. (F)

HORT 236  Greenhouse Ornamentals  3
Prerequisite: HORT 235 1.0 minimum
This is an advanced course for the greenhouse grower. The course will cover the production techniques for cut flowers, holiday crops, and other greenhouse ornamentals. Topics of discussion will include scheduling and timing crops, spacing, production costs, and cultural practices. (Sp)

HORT 237  Bedding Plant Production  3
Prerequisite: HORT 102 1.0 minimum
An advanced course for the greenhouse grower to produce healthy bedding plants at a profit. Topics will include scheduling, spacing, and production costs as well as cultural practices. New varieties will also be presented. (F)

HORT 238  Garden Center/Nursery Sales  3
Prerequisite: None
This course provides business principles for retail sales managers. A thorough discussion of management topics is presented. Emphasis is placed on planning and organizing a garden center, nursery, greenhouse, or florist operation. Effective pricing and merchandising strategies as well as advertising and display techniques are discussed. (Sp)

HORT 295  Horticulture Project Lab  1-4
Prerequisite: Department Approval
This project lab is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required. (F, Sp, Su)

HUMS - Humanities

HUMS 120  Western Art and Music History  4
Prerequisite: Reading Level 5 and Writing Level 4
An introduction to the masterpieces of art and music from preliterate times to the 20th century. Audio and visual material will be used to illustrate artistic and musical contributions of Europe and America to the development of Western culture. (F, Sp, Su)

HUMS 140  Art of Being Human  4
Prerequisite: Reading Level 5 and Writing Level 6
Through an interdisciplinary exploration of art, dance, history, literature, music, philosophy, religion, and theater, students will analyze human experience and examine their values. An active learning environment using team-teaching will encourage self-discovery and understanding of the issues and concerns found in the Humanities and Performing Arts. (F)

HUMS 150  Mythology  4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
Classical Greek and Roman myths constitute the first half of the course with the remainder chosen from at least two of the following areas: African, American, Far Eastern, Medieval European, Near Eastern, or Norse. Reading and analysis of primary sources in translation and their cross-cultural comparison are emphasized. (F, Sp, Su)

HUMS 211  History of Art I  4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, and Europe from preliterate times to the 18th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques, and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp, Su)

HUMS 212  History of Art II  4
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: WRIT 121 or WRIT 131
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, and Europe from the 18th to the 20th century. Emphasizes analysis and comparison of artistic concepts, styles, and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp)

HUMS 213  World Civilizations I  4
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: WRIT 121 or WRIT 131
Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of early civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)

HUMS 214  World Civilizations II  4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)

HUMS 215  American Civilization  4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
This course will explore the cultural foundations of the United States from the period of exploration to the present. This is an interdisciplinary course which examines central themes of American culture and their representation in history, literature, art, philosophy, and religion. (Su)

HUMS 225  Great Lakes Native Amer.Hist&Trad  4
Prerequisite: None
Surveys the Great Lakes Native American culture and people, the differences in oral tradition and written histories of the Great Lakes Anishinabeek (First People), the Talking Circles for community problem solving, and an introduction to the language. (F, Sp, Su)

HUMS 260  Seminar: Ancient Egypt  4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
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  Sem:Ethical Issues in Medicine  3
Prerequisite: None
This course will present some of the ethical dilemmas which arise in relation to health care and develop a framework for ethical decision-making with which to deal with these and other related problems. It is designed for both health care professionals and others who are interested in these issues. (F, Su)

HUMS 295  Indep. Study in Humanities  1-4
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

HUS 100  Introduction to Human Services  3
Prerequisite: Reading Level 3 and Writing Level 4
This course presents an overview of the basic programs and social services which provide human services. It provides the student with an orientation to and overview of methods and problem-solving skills used by human service workers in a variety of settings. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 2003–2005
HUSE 101 Personal Dimensions/Human Serv 2
Prerequisite: None
This course explores the nature and development of personal dimensions of human services, including knowledge, values, and skills needed by people who are preparing for careers in helping professions. The potential impact and influence of these skills on the helping process are also explored. (F, Sp)

HUSE 110 Intro/Child Abuse and Neglect 3
Prerequisite: None
This course reviews the history and scope of child abuse and neglect, including sociologic and psychological factors. It explores the world of abnormal behavior, roles of community agencies and disciplines, approaches to treatment and prevention, coordination of services, and legal aspects of the law. (F, Sp)

HUSE 112 Understanding/Substance Abuse 3
Prerequisite: None
This course reviews substance abuse and use from a historical, sociological, and psychological perspective. It includes drug classifications, street terminology, and causes of abuse, and examines past and current legislation regarding substance abuse and use. Ethical issues discussed include professional competency and responsibility, confidentiality, and the commitment to nondiscrimination. (F, Sp, Su)

HUSE 120 Introduction/Family Violence 2
Prerequisite: None
This course provides an overview of the historical, socioeconomic, cultural, and psychological factors associated with family violence emphasizing battered women. The resources available, intervention techniques, the role of law enforcement agencies, legislative bodies, and social service agencies are discussed. (F)

HUSE 240 Substance Abuse: Spec Pop/Adol 3
Prerequisite: HUSE 112 2.5 minimum or Concurrently
This course surveys substance abuse in various populations including adolescents, elderly adults, women, individuals with physical or psychological disabilities or challenges, as well as various ethnic groups including African Americans, Native Americans, and Hispanics. Commodities and areas of uniqueness for each is examined. Reasons for abuse, dependency dynamics, and treatment considerations are explored. (Sp)

HUSE 242 Chemically Dependent Family 3
Prerequisite: HUSE 112 2.5 minimum or Concurrently
This course provides a conceptual framework within which to understand, assess, and effectively intervene/interact in counseling fashion with the chemically dependent family. Specific subgroups and issues within or resulting from the chemically dependent family are explored. (Sp)

HUSE 245 Addiction: Prevention/Treatment 4
Prerequisite: HUSE 112 2.5 minimum or Concurrently
This course provides a developmental framework for understanding the multiple factors contributing to substance abuse and examines cycles of addiction, personality, and patterns of interaction. Prevention programs and strategies are identified and analyzed, as are specific approaches and treatment modalities. Ethical issues are addressed, including confidentiality, professional relationships, and advocacy. (F)

HUSE 282 Human Services Practicum I 4
Prerequisite: SOWK 203 2.5 minimum and (WRIT 121 2.0 minimum or WRIT 131 2.0 minimum) and Department Approval
Recommended: HUSE 101 and (SOCIL 254 or SOCIL 260) and Human Services Experience
This course combines classroom training with beginning field experience (10 hours per week) in a community-based human services agency. Emphasis is on knowledge of the community, power structure, funding basics, and the internal workings of human services organizations. Opportunities in the labor force, certification requirements, and networking are explored. (F)

HUSE 284 Human Services Practicum II 4
Prerequisite: HUSE 282 2.5 minimum
This course provides classroom training on principles of human services delivery with advanced practical experience (10 hours per week) in a community-based human services agency. Emphasis is on identifying systems and resources to link the systems with the people and how to mobilize the systems and the people. (Sp)

HUSE 297 Human Services Indepen Study 1-3
Prerequisite: Department Approval
This course includes special research, directed study, or service-learning projects in human services areas, such as gerontology, social work, substance abuse or related areas. It requires at least 16 hours of independent work for each credit. A learning contract specifying objectives, activities and outcomes is required. (F, Sp, Su)

HVAC 100 Fundamentals of HVAC 3
Prerequisite: None
This course is an introduction to the mechanical refrigeration cycle and its individual components. Compressors, evaporators, condensers and metering devices as well as their functions are covered in detail. Exercises in psychrometrics and an introduction to system design are also covered. (F, Sp, Su)

HVAC 105 Sheet Metal Fabrication/Instal 2
Prerequisite: None
Designed to aid the installer in the skills and techniques for installation of residential heating and cooling systems. Topics include sheet metal layout, identification of sheet metal fittings and general furnace installation procedures. (F, Sp, Su)

HVAC 110 Applied Electricity I 2
Prerequisite: None
An introduction to basic electricity (AC and DC) using both theory and applied study methods. Topics will include electrical components, symbols, basic schematic diagrams, Ohm’s Law applied to series and parallel circuits and motor types and usages. In conjunction with lab exercises, meters and their proper usage will be covered. (F, Sp, Su)

HVAC 111 Applied Electricity II 2
Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
The study of rotors with an emphasis on theory, troubleshooting and servicing. Motor controls, control circuits, protects devices and discussion of energy conservation as related to rotors will be covered in detail. (F, Sp)

HVAC 120 Heating I 4
Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
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)

HVAC 130 Air Conditioning I 4
Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
Fundamentals and principles of residential air conditioning systems. Students will learn soldering and brazing of tubing, wiring, component testing, evacuation procedures, charging and maintenance of both split systems, as well as small packaged units. (F, Sp)

HVAC 201 Mechanical Code 4
Prerequisite: HVAC 120 1.5 minimum and HVAC 130 1.5 minimum
A fundamental course designed to acquaint the student with the methods and techniques used in field inspection of mechanical systems. The Michigan Mechanical Code and excerpts from the International Fuel Gas Code and Michigan Residential Code will be discussed. (F, Sp)

HVAC 211 Schematics 3
Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
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)

HVAC 220 Heating II 4
Prerequisite: HVAC 111 1.5 minimum and HVAC 120 1.5 minimum and HVAC 211 1.5 minimum
Fundamentals and principles of electronic ignition systems including troubleshooting and servicing. The major emphasis is placed on high efficiency and condensing furnaces to include sequence of operation, troubleshooting, servicing and proper installation. (F, Sp)
HVAC 221 Introduction to Hydronics
Prerequisite: HVAC 220 1.5 minimum
This course covers hot and cold water residential heating systems, piping, and all accessories, safety controls, expansion tanks, zone valves, installation procedures, and codes. Students perform testing, troubleshooting, adjusting and servicing of components to insure maximum efficiency. (F, Sp)

HVAC 236 Air Conditioning II
Prerequisite: HVAC 111 1.5 minimum and HVAC 130 1.5 minimum and HVAC 211 1.5 minimum
This course covers the installation, operation and maintenance of an air conditioning unit as well as troubleshooting and repair. (F, Sp)

HVAC 237 Heat Pump
Prerequisite: HVAC 232 1.5 minimum
This course covers the installation, operation and maintenance of heat pumps. (F, Sp)

HVAC 240 Refrigeration I
Prerequisite: HVAC 232 1.5 minimum or Concurrently
This course covers the installation, operation and maintenance of refrigeration units. (F, Sp)

HVAC 241 Refrigeration II
Prerequisite: HVAC 240 1.5 minimum
This course covers the installation, operation and maintenance of refrigeration units. (F, Sp)

HVAC 250 Pneumatic Control
Prerequisite: HVAC 233 1.5 minimum
This course covers the installation, operation and maintenance of pneumatic systems. (F, Sp)

HVAC 251 Fund of Direct Digital Control
Prerequisite: HVAC 250 1.5 minimum
This course covers the installation, operation and maintenance of direct digital control systems. (F, Sp)

IDS 200 Sonographic Introduction
Prerequisite: Admission to Diagnostic Medical Sonography Program
This course introduces the student to the basic principles of sonography, including equipment operation and human anatomy. (F, Sp)

IDS 201 General Sonography I: Abdomen
Prerequisite: Admission to Diagnostic Medical Sonography Program
This course covers the anatomy and physiology of the abdomen. (F, Sp)

IDS 202 OB/GYN Sonography I
Prerequisite: Admission to Diagnostic Medical Sonography Program
This course covers the anatomy and physiology of the obstetric and gynecologic patient. (F, Sp)

IDS 234 Sonographic Physics
Prerequisite: Admission to Diagnostic Medical Sonography Program
This course covers the physics of sonography, including sound waves and their interaction with tissues. (F, Sp)

IDS 245 Sonographic Instrumentation
Prerequisite: IDS 234 2.5 minimum
Co-requisite Course(s): IDS 205 and IDS 206 and IDS 207
This course covers the use of diagnostic equipment, including ultrasound and Doppler equipment. (F, Sp)

IDS 265 General Sonography II
Prerequisite: IDS 201 2.5 minimum
Co-requisite Course(s): IDS 245 and IDS 206 and IDS 207
This course covers the anatomy and physiology of the obstetric and gynecologic patient. (F, Sp)

IDS 265 OB/GYN Sonography II
Prerequisite: IDS 220 2.5 minimum
Co-requisite Course(s): IDS 245 and IDS 206 and IDS 207
This course covers the anatomy and physiology of the obstetric and gynecologic patient. (F, Sp)

IDS 280 Clinical Experience I
Prerequisite: Admission to Diagnostic Medical Sonography Program
Co-requisite Course(s): IDS 201 and IDS 220 and IDS 224
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 281 Clinical Experience II
Prerequisite: IDS 202 2.5 minimum
Co-requisite Course(s): IDS 245 and IDS 206 and IDS 207
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 282 Clinical Experience III
Prerequisite: IDS 203 2.5 minimum and IDS 245 2.5 minimum and IDS 265 2.5 minimum and IDS 266 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 341 Technologist Certification Review
Prerequisite: IDS 204 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 351 Review of Sonographic Procedures
Prerequisite: IDS 205 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 352 Review of Sonographic Procedures
Prerequisite: IDS 206 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 353 Review of Sonographic Procedures
Prerequisite: IDS 207 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 354 Review of Sonographic Procedures
Prerequisite: IDS 208 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 355 Review of Sonographic Procedures
Prerequisite: IDS 209 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 356 Review of Sonographic Procedures
Prerequisite: IDS 210 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 357 Review of Sonographic Procedures
Prerequisite: IDS 211 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 358 Review of Sonographic Procedures
Prerequisite: IDS 212 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 359 Review of Sonographic Procedures
Prerequisite: IDS 213 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 360 Review of Sonographic Procedures
Prerequisite: IDS 214 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 361 Review of Sonographic Procedures
Prerequisite: IDS 215 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 362 Review of Sonographic Procedures
Prerequisite: IDS 216 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 363 Review of Sonographic Procedures
Prerequisite: IDS 217 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 364 Review of Sonographic Procedures
Prerequisite: IDS 218 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)

IDS 365 Review of Sonographic Procedures
Prerequisite: IDS 219 2.5 minimum
This course is a supervised clinical experience in diagnostic medical sonography. (F, Sp)
IMAG 113 Lighting Concepts/Applications 3
Prerequisite: IMAG 111 2.0 minimum or Concurrently
Introduces the student to the 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 Intro Photographic Color Tech 3
Prerequisite: IMAG 112 2.0 minimum and IMAG 113 2.0 minimum and IMAG 117 2.0 minimum and Reading Level 5 and Writing Level 2 and Math Level 3
Introduces the student to the theories and applications of contemporary color photographic materials and processes. Students will learn to produce acceptable color images by applying the concepts of film selection, film testing, color temperature, lighting, and color image design to their evolving work. (F, Sp)

IMAG 117 Intro to Photographic Tech II 4
Prerequisite: IMAG 111 2.0 minimum and Co-requisite: IMAG 118
Students will learn intermediate and advanced black-and-white exposure, developing, and printing controls and techniques. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Successful completion required for continuing in the Imaging Technology Program ( Still Track) at the 200 level. (F, Sp)

IMAG 119 Intermediate Lighting 4
Prerequisite: IMAG 112 2.0 minimum and IMAG 113 2.0 minimum
An exploration of intermediate lighting theories, practices and techniques. This course emphasizes the use of natural light and electronic flash as applied to people, locations and advanced studio settings. (F, Sp)

IMAG 191 Photo Imaging Special Topics 1
Prerequisite: IMAG 117 2.0 minimum
Recommended: IMAG 114 and IMAG 119
Photo Imaging Special Topics will be offered for intermediate and advanced photographic imaging students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F, Sp, Su)

IMAG 192 Photo Imaging Special Topics 2
Prerequisite: IMAG 117 2.0 minimum
Recommended: IMAG 114 and IMAG 119
Photo Imaging Special Topics will be offered for intermediate and advanced photographic imaging students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F, Sp, Su)

IMAG 193 Photo Imaging Special Topics 3
Prerequisite: IMAG 117 2.0 minimum
Recommended: IMAG 114 and IMAG 119
Photo Imaging Special Topics will be offered for intermediate and advanced photographic imaging students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F, Sp, Su)

IMAG 210 Intermediate Color Ap and Tech 3
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum
Introduces the student to the contemporary materials and processes of the receptive/positive color photographic print process. Students will learn to produce professionally acceptable prints from a wide variety of color negatives by applying color balancing and printing controls, print finishing techniques, and lab efficiency skills to their work. (F)

IMAG 212 Large Format Photography 2
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum and (IMAG 210 2.0 minimum or Concurrently)
Introduces student to fundamental lighting and medium format imaging technologies and their application to commercial illustration. Students will work in areas directly linked to the technical elements of this format. (F)

IMAG 213 Portrait Photography 2
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum and (IMAG 210 2.0 minimum or Concurrently)
Introduces students to medium format imaging technologies and their applications to portrait photography. Students will work in areas directly linked to the technical and expressive elements of these formats. (F)

IMAG 214 Photojournalism 2
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum and (ARTS 171 2.5 minimum and IMAG 210 2.0 minimum or Concurrently)
Introduces students to techniques and practices of photojournalism, documentary photography, and public relations photography. (F)

IMAG 215 Photo Imaging Technology 2
Prerequisite: IMAG 210 2.0 minimum and IMAG 212 2.0 minimum and IMAG 213 2.0 minimum and IMAG 214 2.0 minimum and (ARTS 228 2.0 minimum or Concurrently)
Students will apply critical thinking processes and digital photographic imaging technologies to produce a body of work illustrating their areas of special interest. (Sp)

IMAG 228 Independent Study 3
Prerequisite: IMAG 117 2.0 minimum and Approved Proposal
Allows advanced students to pursue study in areas not formally taught within the curriculum. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration. This course may be repeated for credit toward an associate degree with department approval. (F, Sp, Su)

IMAG 229 Advanced Imaging Applications 4
Prerequisite: IMAG 117 2.0 minimum and Approved Proposal
This course allows advanced students to work on improving skills or enhance skills in an area of interest or interest. Students will work with an instructor in a directed learning experience. An acceptable written proposal is required prior to registration. This course may be repeated for credit toward an associate degree with department approval. (F, Sp, Su)

IMAG 232 Internship 3
Prerequisite: IMAG 117 2.0 minimum and Department Approval
This course allows advanced students to work as an intern developing competencies in the technical, business, creative, and communicative aspects of photography, film making, or electronic imaging. An acceptable written application and internship agreement is required prior to registration. This course may be repeated for credit toward an associate degree with department approval. (F, Sp, Su)

IMAG 233 The Business of Photography 2
Prerequisite: IMAG 212 2.0 minimum and IMAG 213 2.0 minimum and IMAG 214 2.0 minimum
This course exposes the student to the general business practices and approaches used in the photographic marketplace. (Sp)

IMAG 234 Portfolio Assembly/Degree Comp 3
Prerequisite: IMAG 210 2.0 minimum and IMAG 212 2.0 minimum and IMAG 213 2.0 minimum and IMAG 214 2.0 minimum
This is a concluding course for the Photography program associate degree. This course finalizes the students portfolio and immediate career plans. Students are required to complete 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 Independent Study 3
Prerequisite: IMAG 117 2.0 minimum and Approved Proposal
This course allows advanced students to pursue study in areas not formally taught within the curriculum where these students require the use of the Photography Center facilities. Students will work in consultation with an instructor. An acceptable written proposal is required prior to registration. This course may be repeated for credit toward an associate degree with department approval. (F, Sp, Su)

IMAG 240 Internship 4
Prerequisite: IMAG 117 2.0 minimum and Department Approval
This course allows advanced students to work as intern developing competencies in the technical, business, creative, and communicative aspects of photography, film making, or electronic imaging. An acceptable written application and internship agreement is required prior to registration. (F, Sp, Su)

INSU - Insurance 3
INSU 265 Principles Risk and Insurance 3
Prerequisite: None
At the completion of this course, the student will have a working knowledge of the theory of risk, insurance terminology, legal insurance contracts, and use of risk management. (Sp)
INTR 100 Interior Design Fundamentals
Prerequisite: None
This course is an introduction to the professional interior designer. Students will study design principles and design fundamentals, including elements of design, human needs, and the use of color and materials. The course includes the study of materials, finishes, and lighting. (F, Sp, Su)

INTR 110 Applied Design/Color Theory
Prerequisite: None
This course is an introduction to the principles of design and color, including the study of color theory and the use of color in design. Students will learn the fundamentals of color and how to apply it in interior design projects. (F, Sp, Su)

INTR 151 Computer-Aided Kitchen Design
Prerequisite: ARCH 100 2.0 minimum or INTR 106 2.0 minimum
Recommended: Windows Experience
This course is an introduction to the use of computer-aided design software in the field of kitchen design. Students will learn how to use software to create and modify designs for kitchen spaces. (F, Sp, Su)

INTR 170 Interior Design Principles
Prerequisite: ARCH 100 2.0 minimum or INTR 106 2.0 minimum and Reading Level 5 and Writing Level 6
This course is an introduction to the principles of interior design. Students will learn about the history and evolution of interior design, as well as the role of the designer in creating a functional and aesthetically pleasing environment. (F, Sp)

INTR 185 Introduction to Textiles
Prerequisite: Reading Level 5 and Writing Level 6
This course is an introduction to the field of textiles, including the history and evolution of textiles, as well as the different types of textiles and their uses in interior design. Students will learn about the properties of different types of textiles and how they can be used in design. (F, Sp)

INTR 201 Cultural Diversity in Housing
Prerequisite: Reading Level 5 and Writing Level 6
This course is an introduction to the study of housing and the role of cultural diversity in housing design. Students will learn about the cultural differences that influence housing design and how to create designs that are culturally sensitive and appropriate. (Sp)

INTR 230 World Decorative Arts
Prerequisite: None
Recommended: Reading Level 5 and Writing Level 6
This course is an introduction to the history and evolution of decorative arts, including furniture, interior architecture, textiles, and accessories. Students will learn about the different cultures and their contributions to the field of decorative arts. (F)

INTR 231 Period Interiors
Prerequisite: None
Recommended: Reading Level 5 and Writing Level 6
This course is an introduction to the study of different interior design periods, including the Renaissance, Baroque, and Empire styles. Students will learn about the historical context and design elements of these periods. (F)

INTR 232 Twentieth Century Interiors
Prerequisite: None
Recommended: Reading Level 5 and Writing Level 6
This course is an introduction to the study of twentieth-century interior design, including the Art Deco, Modernist, and Postmodern styles. Students will learn about the historical context and design elements of these periods. (Sp)

INTR 256 Interior Professional Practice
Prerequisite: None
Recommended: MATH 117
This course is an introduction to the professional practice of interior design. Students will learn about the different aspects of the design process, including client communication, contract negotiation, and project management. (F)

INTR 261 Interiors Project Laboratory
Prerequisite: Department Approval
This course is a project-based course where students will apply the concepts learned in previous courses to a real-world design project. Students will work in teams to create a design solution for a given client. (F, Sp, Su)

INTR 263 Internship
Prerequisite: Department Approval
Recommended: INTR 255 2.0 minimum and GPA 2.5 and 20 credits completed in INTR
This course is an opportunity for students to gain practical experience in the field of interior design. Students will work in a design firm or other related setting and will apply the knowledge and skills learned in previous courses. (F, Sp, Su)

INTR 265 Interior Design Residential
Prerequisite: ARCH 101 2.0 minimum and ARCH 121 2.0 minimum and INTR 151 2.0 minimum and INTR 170 2.0 minimum
Recommended: INTR 106
This course is an introduction to the design of residential spaces. Students will learn about the different factors that influence the design of residential spaces, including budget, functionality, and aesthetics. (F)

INTR 270 Interior Design Portfolio
Prerequisite: None
Recommended: ARCH 121 and 20 credits completed in INTR
This course is an opportunity for students to create a portfolio of their interior design projects. Students will learn how to present their work in a professional manner and how to effectively communicate their design concepts to potential clients. (Sp)

INTR 275 Interior Design Commercial
Prerequisite: ARCH 121 2.0 minimum and ARCH 251 2.0 minimum and INTR 170 2.0 minimum and INTR 190 2.0 minimum
This course is an introduction to the design of commercial spaces. Students will learn about the different factors that influence the design of commercial spaces, including budget, functionality, and aesthetics. (F)

IRX 100 Intro to Imaging/Patient Care
Prerequisite: Admission to Radiologic Technology Program
This course is an introduction to the field of radiology, including the role of the radiographer in the health care field. Students will learn about the different types of imaging modalities and the role of the radiographer in patient care. (F, Sp)

IRX 111 Radiographic Positioning I
Prerequisite: Admission to Radiologic Technology Program
This course is an introduction to radiographic positioning, including the different techniques used in various imaging modalities. Students will learn about the proper positioning of the patient and the use of imaging equipment. (F)

IRX 112 Radiographic Positioning II
Prerequisite: IRX 111 2.5 minimum
This course is a continuation of the radiographic positioning course, focusing on advanced positioning techniques. Students will learn about the different imaging modalities and the proper positioning of the patient for each modality. (Sp)
IRXT 114 Cross-Sectional Anatomy
Prerequisite: IRXT 112 2.5 minimum
This course provides an overview of transverse, coronal, and sagittal sectional anatomy of the human body. Special emphasis is placed on a study of the head and brain, thorax, abdomen and pelvis. The shoulder, elbow, hip and knee are also examined. Correlations between cadaver cross-sections, CTs, MRIs and radiographs are explored. (Sp)

IRXT 121 Radiographic Exposure I
Prerequisite: Admission to Radiologic Technology Program
The formation of the radiographic images is the focus of IRXT 121. Photographic and geometric variables are related to radiographic factors and their various interactions compared and contrasted. Finally, a study of the history of radiology, basics of radiation formation, and anatomy of the X-ray tube are discussed. (F)

IRXT 122 Radiographic Exposure II
Prerequisite: IRXT 121 2.5 minimum
Various beam modifying devices are presented and their relation to formation of a radiographic image studied. A study of manual processing and the theory of image formation is included. Darkroom procedures and quality control, both radiographic and photographic, will also be explored. (Sp)

IRXT 131 Radiologic Physics
Prerequisite: IRXT 122 2.5 minimum and MATN 112 2.5 minimum
Basic principles of physics are related to the radiologic process. A study of basic electricity and the operation of the X-ray circuit are presented. Finally, advanced topics regarding the formation of radiation, protection of the X-ray tube, and X-ray attenuation are studied. (F)

IRXT 132 Radiobiology and Protection
Prerequisite: IRXT 131 2.5 minimum
This course focuses on the rationale for good radiation hygiene and methods used to protect the patient and technologist. Current issues concerning the physiological effects of ionizing radiation are explored. (Sp)

IRXT 200 Intro/Radiologic Pathology
Prerequisite: None
Emphasizes how disease processes are diagnosed radiographically and the relationship of the radiographic appearance of the disease to its anatomic, physiologic, and pathologic characteristics. The etiology, treatment, and resolution of each disease is discussed with an attempt to relate more recent advances in these areas. (F)

IRXT 202 Clinical Practice I
Prerequisite: IRXT 111 2.5 minimum
This is a one-year internship sequence of clinical application in radiography. The course is structured with specific performance activities. Credit is awarded for each individual's participation with a ratio of one credit hour to four clinical hours. The ratio for lecture is consistent with the one-to-one ratio. (Sp)

IRXT 204 Clinical Practice II-S
Prerequisite: IRXT 202 2.5 minimum
This is a one-year internship sequence of clinical application in radiography. The course is structured with specific performance activities. Credit is awarded for each individual's participation with a ratio of one credit hour to four clinical hours. The ratio for lecture is consistent with the one-to-one ratio. (Su)

IRXT 214 Comprehensive Experience I
Prerequisite: IRXT 204 2.5 minimum or IRXT 213 2.5 minimum
This is a one-year internship sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be determined corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (F)

IRXT 215 Comprehensive Experience II
Prerequisite: IRXT 214 2.5 minimum
This is a one-year internship sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be determined corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Sp)
LAND 120 Basics/Landscape Contracting
Prerequisite: None
This course will explore the field of landscape contracting and its relationship to landscape architecture and management. Landscape contractors and their role in plan evaluation, landscape material selection and their installation and construction will be fully analyzed. The role of the individual in the design/build industry will be highlighted. (F)

LAND 130 Interior Landscaping
Prerequisite: None
This course includes the identification, culture, placement, and use of foliage and flowering plants in the office, mall, restaurant or home. Basic principles of landscaping are covered to include soil media, watering, light requirements, fertilizer, and insect and disease control. Management in relation to the plant's placement and use within the interior landscape is also discussed. (Sp)

LAND 132 Residential Landscaping
Prerequisite: None
This course highlights a basic design process approach for developing a homeowner's landscape. The development of a basic design focusing on the homeowner's needs and the landscape elements will be demonstrated. A course for the new homeowner, homeowner renovating his or her landscape, residential landscaper, or nursery person. (F, Sp, Su)

LAND 133 Home Landscape Maintenance
Prerequisite: None
This course will provide the basic understanding of landscape maintenance problems and solutions. Students will develop records and schedules for pest control as well as tree, shrub, lawn, and flower maintenance. Plant selection, installation, pruning, and fertilization will be covered. (F, Sp, Su)

LAND 140 Evergreen and Deciduous Trees
Prerequisite: None
This course emphasizes identification of both common and uncommon deciduous trees, shrubs, evergreens, vines, and ground covers used in the landscape trade. Weekly lab walks facilitate development of field identification skills based on form, foliage, bark, bud, flower, and fruit characteristics. Landscape use and basic culture of individual plants are also covered. (F, Su)

LAND 141 Flowering Trees, Shrubs, Vines
Prerequisite: None
This course explores spring flowering trees, shrubs, broadleaf evergreens, and ground covers. Identification in the field is emphasized during weekly lab walks. Design characteristics of individual plants including size, habit, flowers, fruit, bark, foliage, and buds are discussed as well as basic cultural requirements. (Sp, Su)

LAND 142 Perennial Annual Flower Plants
Prerequisite: None
This course covers the identification and basic culture of approximately 170 perennial and annual flowering and budding plants. Specific features of each plant will be discussed in relation to their proper landscape use. Herbs, grasses, and rock and water garden plants will also be highlighted. (Sp, Su)

LAND 145 Field Exper Landscape Arch
Prerequisite: None
This course introduces the student to various aspects of the landscape architecture profession. Different aspects of the profession will be presented through discussion, videos, slides, field trips, and guest speakers. Topics include urban planning, zoo design, ecological planning, landscape construction, recreation, and park design. (F, Sp)

LAND 150 Principles of Landscape Arch
Prerequisite: None
Students will explore the broad scale philosophical, historical, and technical aspects of landscape architecture. Basic problem-solving techniques and design theory are introduced along with implementation of the design process. (F, Sp, Su)

LAND 152 Landscape Graphics Comm-Begin
Prerequisite: LAND 150 2.0 or Concurrently
This course explores basic illustration techniques relative to the field of landscape architecture. Both the formal and informal applications of mechanical and freehand drafting communication are emphasized to include reproduction printing methods. (F, Sp)

LANDSCAPE SPECIAL TOPICS
Prerequisite: None
The Landscape Special Topics series will feature topics related to the green industries. The lectures will allow students to sample and explore a wide variety of topics related to plant materials, landscape design and construction principles. Topics will range from water gardens and bonsai to rose gardens and herbs. (F, Sp)
LAND 153 – Landscape Graphics Comm-Adv
Prerequisite: LAND 152 1.0 minimum
This course acquaints the student with visual presentation techniques used in landscape architecture. Plan, section, and three-dimensional graphics are explored using a range of media. The student will develop drafting and mechanical-drafting techniques for the preparation of professional graphic presentations. (Sp)

LAND 150 – Planting Design I
Prerequisite: LAND 140 1.3 minimum and LAND 150 1.0 minimum or Concurrently
This course provides an overview of the planting design principles from site analysis to construction documents. Planting design principles are emphasized as well as practical aspects of plant selection and design implementation in a range of design situations. (F)

LAND 151 – Planting Design II
Prerequisite: LAND 160 1.0 minimum
This course applies the planting design skills gained in LAND 160 to a broad range of sites and issues typically encountered in today's landscape design and construction industries. Topics covered include functional uses of plants, native plant material, and planting design in the urban environment. (Sp)

LAND 153 – Designing Ornamental Gardens
Prerequisite: LAND 141 1.0 minimum or Concurrently
This course is a practical approach to designing the herbaceous garden. Annuals, perennials, herbs, and ornamental grasses are analyzed to create a design that will be in harmony with its environment. Color, height, texture, form, and fragrance are some of the plant's characteristics which will be discussed. (F, Sp)

LAND 154 – Site Design
Prerequisite: LAND 159 2.0 minimum
This course emphasizes use of the design process to solve a variety of urban and non-urban site planning problems. Project design solutions require graphic delineation stressing plan view presentations. A variety of drawing scales, graphic materials, and techniques will be explored. (F)

LAND 170 – Site Grading I
Prerequisite: LAND 150 2.0 minimum
This course covers basic through advanced principles, methods, and procedures for grading sites. Use of contour lines, land form interpretation, and earthwork computation are studied and applied to problem solving for both typical and special requirement sites. (F)

LAND 171 – Site Grading II
Prerequisite: LAND 170 2.0 minimum
This course 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 irrigation systems and recreational and utility facilities. (Sp)

LAND 172 – Site Layout
Prerequisite: LAND 171 2.0 minimum or Concurrently
This course covers plan dimensioning and layout techniques for vehicle and pedestrian circulation systems, building locations, utilities, and sporting and recreational facilities. Professional graphic techniques are emphasized. (Sp)

LAND 180 – Landscape Ecology
Prerequisite: None
This course is for the professional as well as the interested individual covering the relatively new field of landscape environments. Develop a basic understanding of landscape communities, how they developed, and how they function. Plant communities, native species, natural design, and environmental impact are some of the topics covered. (F)

LAND 181 – Landscape Restoration/Manage
Prerequisite: None
Recommended: LAND 180
This course will cover the detailed steps necessary to complete a total restoration of a damaged ecosystem. Specific system designs dealing with wetlands and prairies in particular will be highlighted. Specific native plants, animals, and insects will be discussed. Field experiences and native plant identification are a critical part of this course. (Sp)

LAND 182 – Wetland Definition/Evaluation
Prerequisite: None
This course will explore the basic elements of wetland identification. Wetland indicator vegetation, hydrology, and wetland hydrology will be covered. The U.S. Army, Corps of Engineers Wetland Delineation Manual will be used as the guideline for this class. Certification credits can be secured by taking this course. (Sp)

LAND 183 – Planned Wetlands Eval/Restorat
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 and implementation planning. During this design process systems and tools available to accomplish this. Wetland design, restoration, evaluation, and management will also be discussed. (Sp)

LAND 184 – Natural Landscape Design
Prerequisite: LAND 100 2.0 minimum
This course provides an overview of the major natural landscape ecosystems. The design process is applied to woodland, wetland, and prairie design systems. The use of native and exotic plant material is presented in the natural design process. Landscape designs are created for a variety of natural settings. (F, Sp)

LAND 220 – Wetland Restoration
Prerequisite: None
This course will present current information available from the MDNR EPA and Army Corp of Engineers as it relates to wetland regulations and policy. Wetland delineation, mitigation, design, construction, and planning will be highlighted. Restoration enhancement and creation of wetlands will be outlined and developed. (F)

LAND 225 – Landscape Construct Tech Begin
Prerequisite: None
This course will deal with the basic concepts needed to operate as a landscape contractor in the design/build industry. The fundamentals of landscape design evaluation, development of materials lists, and cost takeoffs will be demonstrated. Basic site analysis, site survey, drainage, and grading techniques will be demonstrated. (F)

LAND 225 – Landscape Cost Estimation
Prerequisite: None
This course is an introduction to the study of landscape contracting and the cost estimating process. The class covers the project management process and the cost factors associated with it. The area of material costs, equipment cost, labor costs, and related management charges will be evaluated. The preparation of bids and the bidding process will be highlighted. (F, Sp)

LAND 232 – Professional Res. Land Design
Prerequisite: LAND 100 2.0 minimum
This course is designed for the individual interested in residential and small commercial design projects on a professional scale. Several design problems will be presented and detailed projects will be developed. (F, Sp)

LAND 233 – Grounds Management
Prerequisite: None
The student will evaluate a landscape design concept and specific site plan with total management of the site in mind. Seasonal management such as pruning, transplanting, and application of fertilizer 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
Prerequisite: None
This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrated. Field trips to planning meetings and project sites will be an integral part of this course. (Sp)

LAND 250 – Landscape Construction Methods
Prerequisite: LAND 150 2.0 minimum
This course examines the properties and uses of concrete, asphalt, masonry, wood, and other landscape construction materials. Basic design and installation methods of landscape structures are emphasized in addition to the introduction of professional construction drafting techniques. (F)
LAND 252 Landscape Construction Details 3
Prerequisite: LAND 250 2.0 minimum
Focuses on graphic techniques for drawing construction details and coordination of details with site plan layout. Studies detailing utilities, irrigation systems, circulation systems, recreational facilities, and various site construction techniques. Design-build procedures are stressed, including material takeoff and cost estimating. (Sp)

LAND 276 Landscape Documents and Spec 2
Prerequisite: LAND 164 2.0 minimum
This course explores the relationship and principles between specifications and working drawings. The cost of projects as well as bid preparations will be highlighted. The student will prepare bids, write specifications, and participate in a class bid opening. (F)

LAND 281 CAD Basics in Landscape Design 1
Prerequisite: None
This basic introduction to computer-based landscape design software packages will include basic computer concepts related to landscape drafting and design principles. Hands-on computer exercises will feature landscape modules of site design and selection. (F, Sp, Su)

LAND 282 Computer Draft/Degn Land Arch 3
Prerequisite: None
This course assumes no previous computer experience. A beginning class for the individual interested in computers and what they can do for you in landscape design, maintenance, construction, plant selection, land survey, and cost estimating. AutoCAD will be surveyed and utilized for the computer-aided drafting and design portion of this course. (F, Sp, Su)

LAND 283 Beginning LANDCAD 3
Prerequisite: LAND 282 2.0 minimum
This course assumes basic AutoCAD experience and covers the Site Design LANDCAD package. Site planning and the related modules in site analysis, coordinate geometry, planting design, plant selection, and construction details will be demonstrated and hands-on exercises will be completed. A 3-D landscape design project will also be completed and plotted. (F, Sp)

LAND 284 Advanced LANDCAD 3
Prerequisite: LAND 283 2.0 minimum
This course continues the use of LANDCAD modules and project development. The student will complete detailed drawings utilizing the site planning package. 3-D customization will also be covered including soil modeling, macro commands, line type creation, and customized symbols. This is an advanced LANDCAD class. (Sp)

LAND 285 Computer Landscape Animation 3
Prerequisite: LAND 284 2.0 minimum
This course will familiarize the student with the animation aspects of computer design and presentation. The student will learn to produce an animation project using the latest computer technology. Students will also become familiar with the integration of video and animation in various applications. (Sp)

LAND 286 LANDCAD: Photo Imaging 3
Prerequisite: None
Recommended: LAND 282
This course will cover the use of photo imaging and animation in a landscape design situation by way of lecture, tutorial, and computer usage. Computer modeling as well as imaging will be demonstrated. Various software will be utilized. (Sp)

LAND 289 Land Computer Design/Studio 3
Prerequisite: LAND 292 2.0 minimum
This course involves the use of computer animation presentation software in the three-dimensional arena. Various 3-D presentation software will be utilized to create graphic animations and presentations. (Sp)

LAND 295 Landscape Project Lab 1-4
Prerequisite: Department Approval
This project lab is designed for students who wish to pursue a specialty area in landscape architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)
LEGL 218 – Litigation Specialties
Prerequisite: LEGL 211 2.0 minimum and LEGL 215 2.0 minimum
Covers several specialty areas of law, for example personal injury, professional malpractice, products liability, workers’ compensation, and no-fault auto insurance. Emphasizes role of legal assistant in these practice areas, including drafting of legal instruments. (F)

LEGL 219 Adv Bus Law for Acct Majors
Prerequisite: LEGL 211 1.0 minimum
Recommended: Accounting Background
This self-paced course is intended for students majoring in accounting who have a goal of becoming a Certified Public Accountant (CPA). This course covers the law of sales; commercial paper; security devices; debtor-creditor relations; bankruptcy; insurance; agency; partnership; corporations; wills, trusts and estates; employment regulation; real property; and accountant's liability. This course is taught via Computer Manager Learning (C.M.L.). (F, Sp)

LEGL 220 Internat Legal Issues/Orgzn
Prerequisite: LEGL 215 2.0 minimum
This course will introduce global issues and organizations from the legal perspective and related economic and ethical perspectives. Cases based on events from around the globe will be used to illustrate principles, structures, and perspectives of citizens from many countries. Students will examine how these topics impact their daily activities. (Sp)

LEGL 221 Real Estate Transaction
Prerequisite: LEGL 215 0.0 minimum and LEGL 215 2.0 minimum
Covers fundamental principles of real estate property law and introduces the student to common types of real estate transactions encountered by a legal assistant in a typical real estate practice. Subject matter includes deeds, land contracts, mortgages, title insurance, environmental issues, foreclosures and foreclosures, and landlord-tenant relationships. (F)

LEGL 222 Probate Law and Procedure
Prerequisite: LEGL 215 2.0 minimum and LEGL 215 2.0 minimum
Probate processes will be addressed in detail, from commencement of proceedings through closing of the estate of a decedent. Other topics will include wills, trusts, and related topics. Emphasis is on the part played by the legal assistant in preparation of documents and other probate practice tasks. (Sp)

LEGL 223 Domestic Relations
Prerequisite: LEGL 215 2.0 minimum and LEGL 215 2.0 minimum
In-depth study of marriage, divorce, separation, annulment, paternity proceedings, custody, support, property division, and other areas of domestic relations law. Emphasis will be on the legal assistant’s role in dealing with clients and applying appropriate statutes, case law, and court rules as part of a domestic law practice. (Sp)

LEGL 224 Administrative Law
Prerequisite: LEGL 215 0.0 minimum and LEGL 215 2.0 minimum
The relationship of governmental administrative agencies to private citizens is explored by studying how law is created and enforced by such agencies at the state and federal levels. Legal assistant students will focus on topics including rule making procedures, regulations, adjudication, licensing, and informal action. (F)

LEGL 225 Legal Research and Writing II
Prerequisite: LEGL 120 2.0 minimum and LEGL 121 2.0 minimum
Reviews principles of legal research, analysis, and writing. Introduces student to computer-assisted legal research (e.g., LEXIS or Westlaw). Student will draft legal memorandum, opinion letters, and an appellate brief based on extensive research assignments in federal and Michigan publications. Some classes may be at off-campus libraries. (F, Sp)

LEGL 226 Legal Interview/Investigation
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum
Interrogating and investigation methods including information gathering, analysis, and effective communication. Emphasis will be placed on the role of the legal assistant with numerous practical exercises. (Sp)

LEGL 227 Bankruptcy and Collections
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum
Explores federal bankruptcy law and procedure with emphasis on the legal assistant’s role in collecting information, interviewing clients, and preparing documents. Topics include a comparison of selected chapters within the bankruptcy code, exemptions, preferences, petitions, schedules, and the part played by the bankruptcy trustee. (Sp)

LEGL 228 Computer Appl for the Law Oic
Prerequisite: CAES 113 2.0 minimum and LEGL 120 2.0 minimum
Recommended: Windows 95 and Keyboarding Experience
This course focuses on computer technology as it is applied within the law office, including the use of computers to perform legal assistant functions in litigation support, legal research, communication, and case management applications, such as calendar and docket control. (F, Sp)

LEGL 229 Immigration Law
Prerequisite: LEGL 115 2.0 minimum or LEGL 215 2.0 minimum
Recommended: Reading Level 5 and Writing Level 5
This course covers fundamental principles and practical application of immigration law and procedure and prepares the student to work with clients from cultures around the world. Topics will include sources, history and future of immigration law, visas, citizenship, refugee/asylum, removal and deportation, and impact of other areas of law. (F, Sp)

LEGL 230 Legal Assistant Internship
Prerequisite: Department Approval
Student will experience the paralegal career by working as a legal assistant in a supervised capacity. Placements include private law firms, governmental law offices, courts, corporations, and other law-related settings. Requirements include at least 160 hours in the workplace, weekly reports, periodic meetings, and performance evaluations by on-site supervisor. (F, Sp, Su)

LING - Linguistics
LING 230 Introduction to Linguistics
Prerequisite: None
Examines human language from the perspective of contemporary American linguistics: generative syntax, phonology, and morphology. Special attention to the structure of English. Considers regional and social variation, and implications for teachers of language skills. (Sp)

MACH - Machine Tool Technology
MACH 100 Manufacturing Processes
Prerequisite: None
Recommended: MATH 100 or Math Level 4
This course provides students with a comprehensive study of the materials, concepts and processes used in modern manufacturing which is augmented by field trips to local manufacturing plants. This course is designed for those who are pursuing careers in manufacturing design, engineering, and supervision. (F, Sp, Su)

MACH 105 Machine Tool Survey
Prerequisite: None
Recommended: MATH 105 or Math Level 4
Informs students of the machine tool principles and practices used in industry. Safety, terminology, measurement and procedures are used to complete required projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations and hands-on projects. (F, Sp, Su)

MACH 110 Machine Tool Technology I
Prerequisite: MACH 105 2.0 minimum
Informs students of shop safety, shop terminology, hand tools, machine tools, measurement and layout practices. To complete the course, a series of lectures, demonstrations and projects are used to guide the students. The competency required to successfully complete the course is at the apprentice level. (F, Sp)

MACH 111 Machine Tool Technology II
Prerequisite: MACH 105 2.0 minimum
Recommended: MACH 110
This course is structured to apply hands-on applications to metal working saws, mills, drills and surface grinders. Bench work and layout procedures with technical terminology and mathematical applications are developed to the technical level of an apprentice. (F, Sp)

MACH 112 Machine Tool Technology III
Prerequisite: MACH 110 2.5 minimum and MACH 111 2.5 minimum
This course will use indexing, precision grinding, close tolerance milling, lathe work and broaching to complete the required projects. The student will accomplish these goals by using modern machine shop technology, applied math skills, planning and precision measuring instruments. (Sp)
### MACH 120 Effect Use Machinery Handbook
- **Prerequisite:** None
- **Recommended:** MATH 114 or TECH 101

This course covers the use of machinery for various industries. Students will learn about the safety and operation of machinery. (4)

### MACH 130 Dies Construction
- **Prerequisite:** None
- **Recommended:** MACH 110 and MACH 111

This course focuses on the design and construction of dies used in manufacturing processes. Students will learn about die materials, tooling, and die maintenance. (4)

### MACH 135 Metallurgy and Heat Treat
- **Prerequisite:** None
- **Recommended:** MACH 110 and MACH 111

This course introduces the principles of metallurgy and heat treatment. Students will learn about the properties of metals and how they are altered through heat treatment processes. (4)

### MACH 140 Tooling Theory and Practices
- **Prerequisite:** None
- **Recommended:** MACH 110 and MACH 111

This course covers the design and use of tooling in manufacturing. Students will learn about tool materials, cutting tools, and tool design. (4)

### MACH 194 Machine Tool Tech Project Lab
- **Prerequisite:** Department Approval
- **Recommended:** MACH 110 or MACH 111

This project-based course allows students to apply their knowledge in a practical setting. Students will work on projects under the supervision of a faculty member. (4)

### MACH 210 Pneumatic and Hydraulic System
- **Prerequisite:** None
- **Recommended:** MACH 103 and MACH 111

This course covers the principles and applications of pneumatic and hydraulic systems. Students will learn about the design and control of these systems. (4)

### MACH 211 Compound Angles
- **Prerequisite:** MATH 114 or MATH 115
- **Recommended:** MACH 111

This course focuses on the use of compound angles in manufacturing. Students will learn about the design and use of compound angle cutting tools. (4)

### MASH - Massage Therapy

#### MASH 270 Massage Therapy-Beginning
- **Prerequisite:** None
- **Recommended:** BIOL 145 or previous ANAT 145

This course introduces students to massage therapy. Students will learn basic massage techniques and terminology. (2)

#### MASH 271 Massage Therapy-Intermediate
- **Prerequisite:** MASH 270

This course builds on basic techniques and introduces more advanced massage techniques. Students will learn about deep tissue massage and other specialized techniques. (2)

#### MASH 275 Touch for Health
- **Prerequisite:** None

This course focuses on the touch techniques used in massage therapy. Students will learn how to apply touch techniques to balance the body's energy systems. (1)

### MATH 101 Math Anxiety Workshop
- **Prerequisite:** None

This workshop addresses math anxiety and its impact on students. Strategies to overcome math anxiety will be discussed. (0.5)
MATH 050 – MATH 201  
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MATH 050 Math-Principles and Practices
Prerequisite: Math Level 3 and Reading Level 3 and Writing Level 2
This course reviews mathematical operations involving fractions and decimals. Topics include percents, ratios, proportions, U.S. and metric measurements, geometric figures, statistical graphs, Pythagorean Theorem, angles, perimeter, area, and volume. It also introduces algebraic concepts using expressions and equations. Problem solving, estimation, and reasoning skills are taught. The calculator and real-life applications are integrated throughout the course. (F, Sp, Su)

MATH 107 Introductory Algebra
Prerequisite: (MATH 050 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 2
Graphing calculator required. Topics include properties of real numbers and exponents, variable expressions, solving linear quadratic and absolute value equations, polynomial operations including factoring, graphing, rational expressions and equations, and inequalities. Graphing calculator, diverse, real-life applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 112 Intermediate Algebra
Prerequisite: (MATH 104 2.0 minimum or MATH 107 2.0 minimum within 2 years or Math Level 5) and Reading Level 5 and Writing Level 4
Intermediate Algebra is an extension of Beginning Algebra with emphasis on diverse real-world applications. This includes solving linear, quadratic and exponential functions algebraically and graphically. Rational equations, radicals, equations, inequalities, systems of equations, matrices and complex numbers are included. The TI-83 or TI-83Plus graphing calculator is required. (F, Sp, Su)

MATH 114 Technical Math I
Prerequisite: (MATH 050 2.0 minimum within 2 years or Math Level 4) and Reading Level 3
This course introduces and/or reviews algebra, geometry, and trigonometry. Topics include order of operations, simplifying algebraic expressions, powers, roots, rectangular formulas, area, volume, ratio and proportion, linear and quadratic equations, linear systems of equations, graphing, angles, triangles, Pythagorean Theorem, and right triangle trigonometry. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp, Su)

MATH 115 Technical Math II
Prerequisite: MATH 114 2.0 minimum within 2 years and Reading Level 5 and Math Level 5
A continuation of MATH 114. Topics include congruent and similar triangles; polygons; circles with angles, chords, and tangents; applications of right and oblique triangles using the Pythagorean Theorem, trig functions, law of sines, law of cosines, and law of cotangents. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp, Su)

MATH 117 Math for Business
Prerequisite: (MATH 104 2.0 minimum or MATH 107 2.0 minimum within 2 years or Math Level 5) and Reading Level 5 and Writing Level 4
This course surveys math applications in business. Applications of representing management, marketing, finance, accounting, and statistics are used. Analysis of situations in business and correct use of business theory is emphasized in addition to accuracy in math. (F, Sp)

MATH 118 The Art of Geometry
Prerequisite: (MATH 107 2.0 minimum within 2 years or Math Level 5) and Reading Level 5 and Writing Level 4
This course emphasizes visualization and appreciation of the beauty of mathematics through geometry; translates between visual and symbolic representations of objects used in visual arts; applies mappings, symmetry, similarity, bimetry, vectors, and geometric constructions of shapes to working with 2D and 3D figures; uses geometry software, hands-on techniques and models. (F, Sp)

MATH 119 Investigations With Math
Prerequisite: (MATH 107 2.0 minimum within 2 years or Math Level 5) and Reading Level 5 and Writing Level 4
Uses strategies of arithmetic, geometry, and algebra to solve problems and effectively communicate solutions in a variety of occupational disciplines. Applies reasoning, problem solving, teamwork, mathematical thinking and modeling, visual models, and hands-on activities to measurement, proportions, percents, graphs, formulas, variables, geometry concepts, coordinate systems, and statistical reasoning and probability. (F, Sp)

MATH 121 College Algebra I
Prerequisite: (MATH 112 2.0 minimum within 2 years or Math Level 6) and Reading Level 5 and Writing Level 4
This course provides the foundation in college algebra essential for all subsequent mathematics courses. After completing MATH 121, students may take MATH 130, 141 and STAT 170. Topics include polynomial, rational, radical, exponential, and logarithmic functions; solving equations/inequalities algebraically and graphically; and mathematical modeling/regression in problem-solving. (F, Sp, Su)

MATH 122 College Algebra II and Trig
Prerequisite: (MATH 121 2.0 minimum within 2 years or Math Level 6) and Reading Level 5 and Writing Level 4
Second in two-course sequence, following MATH 121. Topics include right triangle trigonometry, trigonometric functions, graphs, identities and equations, inverse trig functions, laws of sines/cosines, binomial theorem, systems of linear equations, vectors, polar coordinates, sequences, series, permutations and combinations. Degree credit may not be earned in both MATH 121-122 and MATH 126. (F, Sp, Su)

MATH 126 College Algebra and Trig
Prerequisite: (MATH 112 3.5 minimum within 2 years or Math Level 7) and Reading Level 5 and Writing Level 4
Intensive course covering the same material as MATH 121-122. Topics include algebraic and transcendental functions, solving equations/inequalities algebraically and graphically, mathematical modeling, trigonometric identities, laws of sines/cosines, binomial theorem, vectors, polar coordinates, sequences, series, permutations and combinations. Degree credit may not be earned in both MATH 126 and MATH 121-122. (F, Sp, Su)

MATH 130 Finite Mathematics
Prerequisite: (MATH 112 2.0 minimum within 2 years or Math Level 6) and Reading Level 5 and Writing Level 4
This course is for students whose programs do not require trigonometry. Topics include linear, exponential, quadratic polynomial and logarithmic functions, mathematics of finance, matrices, linear programming, permutations, combinations, probability, and Markov chains. In addition, students will solve applied problems by completing required computer assignments. (F, Sp, Su)

MATH 141 Calculus with Applications
Prerequisite: (MATH 121 2.0 minimum or MATH 126 2.0 minimum or MATH 130 2.0 minimum within 2 years or Math Level 9) and Reading Level 5 and Writing Level 4
This course provides an introduction to calculus with an emphasis on applications in business, economics, social/life sciences and other fields not requiring an extensive study of calculus. Topics include functions, derivatives, the definite integral and their applications. Mathematics, Physical Science, Computer Science, and Engineering majors should take MATH 151. (F, Sp, Su)

MATH 151 Calculus I
Prerequisite: (MATH 122 2.0 minimum or MATH 126 2.0 minimum within 2 years or Math Level 9) and Reading Level 5 and Writing Level 4
The first course in a three-semester calculus sequence. Topics include limits, continuity, derivatives of algebraic, trigonometric, exponential and logarithmic functions, linear approximation, integration and the fundamental theorem of calculus. Applications of the calculus to both physical and geometric problems are emphasized. (F, Sp, Su)

MATH 152 Calculus II
Prerequisite: MATH 151 2.0 minimum within 2 years and Reading Level 5 and Writing Level 4
The second course in a three-semester calculus sequence. Topics include techniques and applications of integration, L'Hopital's rule, derivatives of inverse trigonometric functions, improper integrals, sequences and infinite series, power series representation of functions, conic sections, and polar coordinates. (F, Sp, Su)

MATH 201 Math for Elementary Teachers I
Prerequisite: (MATH 112 2.0 minimum within 2 years or Math Level 6) and Reading Level 5 and Writing Level 6
This course is the first in a two-course sequence providing a mathematical background for prospective elementary teachers. Emphasis is on active engagement in mathematical investigations to develop problem-solving skills and conceptual knowledge essential for teaching elementary school mathematics. (F, Sp)
MATH 202 Math forElemen Teachers II 4
Prerequisite: MATH 201 2.0 minimum within 2 years and Reading Level 5 and Writing Level 6
This course is the second in a two-course sequence providing mathematical background for prospective elementary teachers. Emphasis is on active engagement in mathematical investigations to develop problem-solving skills and conceptual knowledge essential for teaching elementary school mathematics. (Sp)

MATH 253 Calculus III 4
Prerequisite: MATH 152 2.0 minimum within 2 years and Reading Level 5 and Writing Level 4
The last course in a three-semester calculus sequence. Multivariable calculus and vector analysis are studied. Topics include vectors, vector functions, partial derivatives, multiple integrals, and line integrals. Applications and all these topics are presented. (F, Sp, Su)

MATH 254 Intro: Differential Equations 3
Prerequisite: MATH 253 2.0 minimum within 2 years and Reading Level 5 and Writing Level 4
An introduction to the basic methods for solving ordinary differential equations. Topics include the methods of undetermined coefficients, variation of parameters, series, Laplace transforms, and numerical methods. Applications are emphasized. (F, Sp, Su)

MATH 259 Linear Algebra 3
Prerequisite: MATH 253 2.0 minimum within 2 years and Reading Level 5 and Writing Level 4
This Introduction to Linear Algebra includes the study of systems of linear equations, matrix algebra, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications. (Sp)

MATH 281 Honors Math Seminar I 1
Prerequisite: MATH 151 2.0 minimum and Department Approval
Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp)

MATH 282 Honors Math Seminar II 1
Prerequisite: MATH 281 2.0 minimum and Department Approval
Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp)

MATH 295 Indisp. Study in Mathematics 1-4
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

METR - Meteorology

METR 220 Introduction to Meteorology 4
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 5
This course includes a study of the interrelationships of the elements (temperature, moisture, pressure, wind) that create weather. Human-atmospheric interactions (e.g., pollution, severe weather, greenhouse effect), world climate, and climatic change are also discussed. Laboratory includes making weather observations and measurements and learning how to draw and interpret weather maps. (Sp)

MFGM - Manufacturing Maintenance

MFGM 101 Industrial Hydraulics 4
Prerequisite: None
Industrial hydraulics introduces the theory of fluid power and circuits covering pumps, pressure vessels, flow valves, cylinders, filters and motors, etc., as they are used in industry today. This will be done with lectures and labs related to each of the respective components. (F, Sp)

MFGM 102 Industrial Pneumatics 3
Prerequisite: None
Introduces the students to the theory of industrial pneumatic systems. The theory of gas laws, pumps, filters, valves, etc., will be discussed as they are applied to the industrial pneumatic systems. The use of lecture and labs will give the students a hands-on approach to the use of pneumatics. (F, Sp)

MFGM 110 Machine Maintenance I 4
Prerequisite: None
Theory and Industrial application of machine repair, preventive maintenance, safety practices and troubleshooting, with actual dismantling and rebuilding of tool room machines. (F, Sp)

MFGM 111 Machine Maintenance II 4
Prerequisite: MFGM 110 2.0 minimum
Advanced theory and practice of machine tool repair including preventive maintenance. The theory and repair of pumps and pneumatic tools will be covered. (F, Sp)

MFGM 120 Industrial Presses 4
Prerequisite: None
Covers different types of mechanical presses, terminology, purposes and functions in industry. Includes movies and slides of mechanical action, maintenance systems and safety, supplemented by visits to plants using presses and press repairs. For mechanical trades apprentices, press repair and maintenance people, stamping plant employees, press operators and die shop employees. (F, Sp)

MFGM 125 Rigging 2
Prerequisite: None
Covers uses and strengths of ropes, chains, block and tackles, and the construction and selection of gin poles, with study of rope knots used in rigging. Safe working strength of slings, hoists, sheaves, ropes and chains, and the use of personal safety equipment will be covered. (Sp)

MFGM 170 Fork Lift Truck Driver Train 5
Prerequisite: None
Students will learn the basic safety guideline and basic operational procedures of industrial fork trucks. The instructor will combine lecture, written materials and hands-on practice of a fork truck. (F, Sp, Su)

MFGM 250 Manufacturing Internship 3
Prerequisite: Department Approval
Recommended: 2.5 GPA or greater
This course provides Manufacturing students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab in an actual job situation. (F, Sp)

MATH - Management

MGT 101 Management Special Topics 1
Prerequisite: None
This course explores recently identified current issues, knowledge, skills, attitudes and behaviors relevant to the professional development of managers and management students. (F, Sp, Su)

MGT 150 Managing Customer Relations 3
Prerequisite: None
This course is designed to help customer service workers and managers explore the dynamics of customer service and customer relations. The course includes strategies for providing for customers' needs, behavioral skills and knowledge for effective customer service, verbal and non-verbal skills for effective customer communication, and techniques for measuring success. Focus is on the dynamics of building successful relationships. (F)

MGT 200 Creative Thinking for Business 3
Prerequisite: None
Recommended: Have Taken at Least Two or More BUSN, MGMT or Business Experience
This course takes an experiential approach to helping students understand and explore the elements of the creative process. It is designed to develop skills, eliminate barriers, and allow students to apply thinking skills to business situations. (F, Sp)

MGT 223 Developing Supervisory Skills 3
Prerequisite: None
This course presents supervisory principles and practices for first-line supervisors. Emphasis is on developing interpersonal and first line supervisory skills. Management functions of planning, organizing, staffing, directing, and controlling are introduced, 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
Prerequisite: None
This course is a survey course which examines the role of human resource management and its contribution to the total management effort. Emphasis will be placed on the evolution of human resource management, recruitment and selection, appraising and improving performance, compensation and incentives, safety and health, employee-management relations, and current legislation. (F, Sp)

MGMT 225 Principles of Management
Prerequisite: None
This course assists students and current managers in developing an understanding of the skills required to manage effectively in today's workplace. Designed to reflect the dynamics of our changing world, the course covers such topics as management functions/processes, quality, ethics, global issues and the challenges and opportunities of diversity. Emphasis is on theories and skills of the middle management and organizational level. (F, Sp)

MGMT 227 Training/Development for Busn
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
Prerequisite: None
Examines the dynamics of relationships at work. Integrates and applies behavioral and social science knowledge, using a systems approach, and focusing on the nature of both people and organizations. Students will study individual and group behavior and will have opportunities to work on skills necessary for successful interaction in organizations. (F, Sp)

MGMT 229 Compensation Management
Prerequisite: MGMT 224 1.0 minimum
Recommended: LABT 204
Students will gain a practical understanding of the principles and applications of compensation management. Students will study the theories, behaviors, and legal constraints affecting compensation practices, including job analysis, job evaluation, metroclogy, labor market surveys, variable pay approaches, and the administration of legally mandated and voluntary employee benefit programs. (F)

MGMT 231 Team Development
Prerequisite: None
This course defines and examines team building, team leadership, and self-managed teams in the context of today's workplace. Students develop skills in writing team mission and vision statements, and team goals and action assignments. Students will develop skills in charting, problem solving, decision making, conducting effective meetings and work sessions, negotiating, and presenting. (F, Sp)

MGMT 234 Diversity in the Workplace
Prerequisite: Reading Level 5
This course explores cultural, gender/sexual, physical, and other minority experiences in the workplace and in the world. The management of human resources will be examined from a global perspective. Emphasis is on helping the majority and the minority become aware of the other's opinions, feelings, and perspectives. Instruction takes an experiential, awareness training approach. (F, Sp)

MGMT 235 Independent Study/Management
Prerequisite: Department Approval
Students design and implement special research projects to apply personal and professional experience to an academic area of interest, linking theory with practice. Students meet with coordinator and work independently towards completion of project report. Students should plan a minimum 16 hours per credit and ten pages of report per credit. (F, Sp, Su)

MGMT 237 Managing/Continual Improvement
Prerequisite: None
Provides an introduction to concepts of quality, continual improvement, systems thinking, and other new management practices. Covers the history of the quality movement including key thinkers/teachers. Explores new ways of thinking and leading, methods for continual improvement teams, and "learning organizations". (F, Sp)

MGMT 238 Time and Stress Management
Prerequisite: None
Examines the relationship between time and stress management; stress is the central factor for many of our physical and psychological problems. Suggests methods for harnessing its energy positively. Techniques and strategies for wise utilization of time and energy. Emphasis on creating action plans and initiating corrective actions. (F, Sp)

MGMT 240 How Manager Make Things Happen
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
Prerequisite: None
This course is an overview of the various functions and processes involved in management. Students will explore possible explanations for women's slow rate of progress in attaining managerial positions. It is enlightening and an absolute must for any man who is considering entering or is now a part of management. (F, Sp, Su)

MGMT 242 Mgr's Guide/Working With People
Prerequisite: None
Managers who want to work effectively with people—both on and off the job—will find this course full of valuable information. Students will acquire an understanding of human needs and motivation, leadership styles, problem-solving techniques, and effective methods for being assertive. Students will also learn how to deal with difficult behavior through positive work strategies. (F, Sp, Su)

MGMT 243 How to Delegate Effectively
Prerequisite: None
This course will show students how to increase their productivity through delegation. It is designed to increase comfort with the delegation process and demonstrates how this method of organizing and dispersing work can help improve everyday job performance. (F, Sp, Su)

MGMT 244 Supervisory Management
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
Prerequisite: None
In this course, the student will discover the secrets of great leadership and learn about the four basic leadership styles. You will master the art of goal setting, find your most effective leadership style, and know when to use the right style at the right time. (F, Sp, Su)

MGMT 246 Effective Performance Mgmt
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 impact productivity and profits within the organizational environment. (F, Sp, Su)

MGMT 247 Project Management
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
Prerequisite: None
More than ever, teams are a vital force in today's working environment. This course presents positive, practical methods for building and managing effective teams. Learn how to build trust, confidence, and group work skills and how to balance and fine-tune the team process. Students 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
Prerequisite: None
Discover how seasoned managers cope with difficult personalities in the workplace. This course covers effective communication and motivational and conflict resolution approaches used by experienced managers. Students will also learn how to avoid difficult behaviors by instituting positive work strategies, structures, and values before problems develop. (F, Sp, Su)

MGMT 250 - Fundamentals of Business
Prerequisite: None
Provides the manager with an understanding of finance. This course will help students learn to read and interpret financial statements, annual reports, and balance sheets. It will also teach students to use financial and accounting data more effectively. (F, Sp, Su)

MGMT 251 - Communication Skills for Managers
Prerequisite: None
All managers have a basic tool they can use to effectively get messages across to staff and colleagues: communication. This course presents practical applications for communicating such as writing effective letters, memos and reports, running meetings, conducting interviews, and listening. (F, Sp, Su)

MGMT 252 - Deliver a Winning Presentation
Prerequisite: None
This course will provide the student with a basic awareness of the steps necessary for making an effective oral presentation. It is designed for anyone who wants to reduce the fear of public speaking by learning how to deliver presentations. (F, Sp, Su)

MGMT 253 - How to Write Winning Reports
Prerequisite: None
This course helps students develop a more concise, straightforward writing style. It will help the student express ideas more clearly in business memos, letters, and reports. (F, Sp, Su)

MGMT 254 - How to Write a Business Plan
Prerequisite: None
This course is designed for managers who want to give real meaning and power to their organization's business plan. Participants will learn how to develop realistic action programs and responsibility plans for allocating scarce resources, installing workable monitoring and control systems, and creating supportive policies and procedures. (F, Sp, Su)

MGMT 255 - Strategic Planning and Entrepreneurship
Prerequisite: None
Owners and managers of new and growing businesses, or of companies that operate within an entrepreneurial environment, will learn how to prepare a strategic plan. This course will help students learn about organizational charts, goal-setting matrices, diagnostic summary sheets, and checklists—all designed to help them create a plan that works. (F, Sp, Su)

MGMT 257 - Using Math as a Business Tool
Prerequisite: None
This course is designed to increase familiarity with formulas and calculations most frequently used in business. Participants will learn to apply various ratios to test a company's strengths, use statistical tools to read results more accurately, forecast more reliably, and assess the viability of a project through break-even analysis. (F, Sp, Su)

MGMT 258 - Strategic Resumes
Prerequisite: None
The resume is a sales tool for finding new career opportunities. Students will rethink their personal marketing tool, develop strategies, make up resources, and create a packaged strategic, concise resume to help the applicant stand out and be noticed. (F, Sp, Su)

MGMT 260 - How to Analyze the Competition
Prerequisite: None
This course will enable students to pinpoint competitors' strengths and weaknesses so students can identify and act upon competitive challenges they face. This course also teaches how to assess a competitor's intelligence system. (F, Sp, Su)

MGMT 261 - Psychology of Selling/Winning
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 principles of what to do to become top professional salespeople and what they should do in order to sell successfully. (F, Sp, Su)

MGMT 262 - Keeping Customers Happy
Prerequisite: None
This course is designed to help simplify the task of keeping customers satisfied. The ultimate goal of this course is to help improve students' ability to communicate effectively with customers. (F, Sp, Su)

MGMT 263 - Successful Marketing Strategies
Prerequisite: None
Marketing concepts long associated with manufactured goods are now applied to the service sector. Learn how to create services for markets rather than markets for services. This course is designed for service company managers and others who need to sharpen their competitive edge. (F, Sp, Su)

MGMT 264 - How to Write a Marketing Plan
Prerequisite: None
This course is designed for future or current small business owners, marketing managers, product managers, and others responsible for creating the marketing plan. Students will learn how to fuse vital elements to create a marketing plan that is right for their product line, service department, company, or organization. (F, Sp, Su)

MGMT 265 - WWW Skills: Business/Personal Development
Prerequisite: None
This course is designed for individuals who wish to benefit from online knowledge—the information highway. Includes a high-level visual introduction to the World Wide Web, with Windows overview and basic WWW skills. Students will be introduced to web page creation. This course is designed for interactive WWW learning or training. (F, Sp, Su)

MGMT 266 - Enter International Markets
Prerequisite: None
International trade and marketing is growing rapidly in business. This course will help the student to capitalize on "going global" by providing information on how to research resources, learn terminology, and develop foreign market entry strategy. It is designed for the individual entrepreneur or a manager wishing to improve the bottom line. (F, Sp, Su)

MGMT 268 - Organizing Your Workplace
Prerequisite: None
Organization is a skill that is easy to learn. Personal productivity is reduced by as much as 20 percent or more from ineffective organization of the workplace environment. This course is for anyone who experiences "clutter" in their daily activities. The student will get organized and stay organized as technology impacts the way we work. (F, Sp, Su)

MGMT 270 - Time Management
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, communication, and operational techniques, and ways to reduce stress through change in lifestyle. (F, Sp, Su)

MGMT 271 - Managing Conflict Resolution
Prerequisite: None
Conflict can be managed and yield positive results. Students of this course will gain practical knowledge, learn proven techniques, and acquire psychological insights they can use to resolve conflicts successfully. This course uses case studies, critical incidents, and realistic examples of conflict resolution to teach crucial skills. (F, Sp, Su)

MGMT 272 - Success Through Assertiveness
Prerequisite: None
This course will help individuals understand their own needs and limits and learn how to communicate them in a way that others are not threatened. It will help individuals learn how to use appropriate cues and body language so that others will not be put off. (F, Sp, Su)
MGMT 273 – MGMT 345

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MGMT 273 - Assess Prsnal Interactn Skills
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
Prerequisite: None
This course will show students how to start building financial security. It emphasizes spending strategies and capital-building techniques rather than housekeeping methods. The course is designed for anyone. (F, Sp, Su)

MGMT 275 - How to Build Memory Skills
Prerequisite: None
This course is designed to help the student apply the skills that increase ability to obtain and utilize information. The result of using improved listening and memory skills will help realize leadership potential. (F, Sp, Su)

MGMT 276 - How to Improve Writing Skills
Prerequisite: None
This course helps students strengthen their skills in key communication areas by knowing how to properly use words and phrases associated with business. (F, Sp, Su)

MGMT 277 - Speed Learning
Prerequisite: None
This course offers an entirely different way to read that reduces reading time while increasing comprehension. It teaches how to organize thinking systematically so the reader can learn quickly and efficiently in all reading situations. (F, Sp, Su)

MGMT 278 - Creative Fund-Raising
Prerequisite: None
As traditional funding sources become scarce, creative fund-raising is critical for an organization's survival. This course will guide the student through the process of defining fund-raising in an organization, identifying grant resources, and developing donors through special events. The student will design a strategic fund-raising plan for the solicitation and creative utilization of resources. (F, Sp, Su)

MGMT 279 - Learn APA Write Style for Bus
Prerequisite: None
This course offers a self-paced, hands-on opportunity to learn the rules and style of the Publication Manual of the American Psychological Association. Practice is emphasized, not memorization, allowing the student to use APA as a skill or tool for improving business report writing skills. (F, Sp, Su)

MGMT 280 - Management Internship
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits
This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, management-related, and provide an appropriate learning situation. (F, Sp, Su)

MGMT 300 - Leading for Possibility
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Provides an overview of the changing roles of leadership within an organization and lays a foundation for exploration of the emerging roles and functions of leadership in today's changing environments. Theories and skills are applied to a variety of organizational settings. (F)

MGMT 304 - Organizational Development
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Based on the assumption that all managers must recognize, plan for, and manage organizational change, this course examines the process of improving organization effectiveness by means of a systematic change program. Students practice identifying problems, selecting appropriate interventions, building action plans, and developing facilitator skills. (F, Sp)

MGMT 329 - Adv Mgmt Communication Skills
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
This is an advanced course in interpersonal communication skills for business. It includes components of listening, interpersonal communication, oral presentations, interviewing techniques, meeting management, business report writing, and persuasive speaking. This class is both informational and experiential. (F, Sp)

MGMT 332 - Ethics: Assumt for the Future
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
This course is designed to sensitize participants to the impact of ethics on decision-making. Participants will examine values and assumptions, both personal and organizational, which influence management and leadership style. Exploration of the importance of intention and right relationships in strategy and the creation of the future workplace is also included. (F, Sp)

MGMT 333 - Managerial Statistics
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
This course covers applications of statistical tools and techniques to improve managerial decision-making processes. It includes basic descriptive statistics, probability, probability distributions, confidence intervals, hypothesis testing, analysis of variance, regression analysis and forecasting models. (F, Sp)

MGMT 337 - Human Resource Mgmt Skills
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Skill areas involved in the management of human resources are developed. Techniques for setting objectives with employees, conducting performance appraisals, and working with employee problems are practiced. Students plan techniques for managing teams and for leading and motivating employees. (F, Sp)

MGMT 338 - Current Topics in Management
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Study of specific current topics and issues that affect managerial/leadership decisions. Students explore internal and external constraints on actions. External factors considered include legal, social, educational, and political. Internal factors include shareholders, employees, and customers. (F, Sp)

MGMT 339 - Mgmt Styles/Corp Strategies
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Numerous current materials relating to management styles and cooperation 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 - Context and Transformation
Prerequisite: None
Recommended: Have Taken at Least Three or More BUSN or MGMT Courses, or are Enrolled in the Northwood 3+1 Program, or Have Several Years Business Experience
This course is designed to help people of vision and courage examine the beliefs, principles, and behaviors which drive organizations. In seminar format, participants investigate possibilities for new ways of thinking together, focusing on emerging perspectives of ourselves, our organizations, our communities, and our world. Students explore the growing importance of environment in creating a context for transformation. (F, Sp)
MGMT 346 Managerial Finance
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwest 3+1 Program, or have Management Work Experience

This course is designed to provide necessary and practical skills to deal with financial matters and communicate with people who specialize in finance. Topics covered include basic financial analysis, short-term and long-term financing, financial planning, and managing the finance function. (F, Sp)

MGMT 346 Strategic Management/Policy
Prerequisite: MGMT 225 1.0 minimum or MGMT 302 1.0 minimum and Any MGMT Course Between MGMT 300-346 (Inclusive) 1.0 minimum

This course pulls together learning from the areas of management and marketing to gain an overall organizational perspective which is applied to strategic plan formulation and implementation for the whole organization. The process involves pursuing organizational mission while managing the relationship of the organization to its environment. (F)

MILS - Military Science

MILS 101 Leadership: Military Profession
Prerequisite: None

This course analyzes the military profession and organization of the U.S. Army from several academic perspectives and explores the technical, ethical, and personal ramifications of service as an officer in the U.S. Army. This course provides an introduction to military leadership which draws upon examples from military history. (F, Sp)

MILS 102 Leadership: Wilderness Survival
Prerequisite: None

This course covers but is not limited to psychology of survival, survival planning, survival kits; procurement of food, shelter, and water; firecraft; field expedient weapons, tools and equipment; desert/tropical/cold weather survival and basic survival medicine. Hands on experience. (F, Sp)

MILS 201 Leadership: The Military Leader
Prerequisite: None

This course examines individual leadership development using standardized assessment technology to evaluate potential to command and lead. Communication, administrative, personal relations and decision-making skills training, ethical career assessment, and sources of professional obligation will be reviewed. Lab includes rappelling and small bore rifle marksmanship. (F, Sp)

MILS 202 Intro to Land Navigation/Tactics
Prerequisite: None

This course addresses the basics of reading military topographic maps, basic land navigation, and small unit tactics. (F, Sp)

MGMT - Marketing

MGMT 100 Current Issues in Business
Prerequisite: None

This is an introductory course designed to enhance a student's occupational preparedness and competence by promoting a better understanding of the competitive enterprise system. Classroom instruction will be combined with relevant marketing projects and professional community involvement to give students a solid foundation of marketing knowledge and managerial "know-how." (F, Sp)

MGMT 101 Marketing Special Topics
Prerequisite: None

This course explores recently identified current issues, knowledge, skills, attitudes and/or behaviors relevant to the professional development of professionals in the marketing field and students of marketing. (F, Sp, Su)

MGMT 119 Mktg/Manage Your Profess Image
Prerequisite: None

This course is a complete guide for everyone and their companies need to know to do the right thing at the right time in every business situation. Students will understand the importance of a professional image as it relates to business success and will develop a personal image development plan. (F, Sp, Su)

MGMT 120 Sales
Prerequisite: None

This course presents the fundamentals of selling. Topics include the basics of sales, motivation, and human relations. The course is designed so that students will not only learn about selling, but to be able to do it. (F, Sp)

MGKT 122 Field Sales Internship
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits

This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 150 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, sales related, and provide an appropriate learning situation. (F, Sp, Su)

MGKT 130 Retailing
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)

MGKT 131 Merchandising
Prerequisite: None

This course covers functions and policies of: what, when, where, how much, how to, and from whom to buy. The course provides an 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)

MGKT 140 Introduction to Advertising
Prerequisite: None

Methods and techniques used in 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)

MGKT 200 Principles of Marketing
Prerequisite: None
Recommended: BUUS 119

Designed to define marketing, develop an understanding of the marketing concept and functions, and generally investigate the field of marketing. Will cover the marketing environment, identifying consumer needs, examining product, price, promotion, and distribution strategies within our society. Provides a basic marketing understanding with practical applications. (F, Sp, Su)

MGKT 202 Managerial Marketing
Prerequisite: MGKT 200 1.0 minimum
Recommended: MGKT 204 and Second Year Student

This 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)

MGKT 204 Marketing Research
Prerequisite: MGKT 200 1.0 minimum

Types of data, sampling, data collection, analysis, interpretation, and application of marketing research. A practical managerial approach - not a statistical or mathematical orientation. Students will design and execute a marketing research project. (F)

MGKT 210 Marketing on the Internet
Prerequisite: None
Recommended: MGKT 200 and Basic Understanding of Computers and Their Use on the Internet

This course will explore the impact of information technology on the practice of marketing. Course content focuses on the Internet, its culture and procedures from a marketing perspective, and will include using the Internet for customer contact and customer service. This class uses extensive hands-on activities. (F, Sp)

MGKT 221 Consumer Behavior
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)

MGKT 223 Public Relations
Prerequisite: None

Provides an introduction to principles involved in creating and maintaining good public relations. Techniques for developing improved employer-employee relations, customer relations, and the total public relations effort will be discussed and applied. (F, Sp)

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MKTG 231 Independent Study in Marketing
Prerequisite: Department Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 16 hours of work per credit is required. (F, Sp, Su)

MKTG 235 Marketing Internship
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits
This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 100 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, marketing related, and provide an appropriate learning situation. (F, Sp, Su)

MTEC - Media Technology

MTEC 110 Intro Broadcast/Elec Media
Prerequisite: Reading Level 5 and Writing Level 6
This is an introductory survey course which examines various electronic media industries and the historical, technological, regulatory, economic, programming, and societal contexts in which they exist. (F, Sp)

MTEC 120 Audio Production I
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Basic Computer Skills
A beginning course which covers the basics of audio theory and production techniques. Included are topics in microphonic selection and use, analog and digital audio formats, mixing, and signal flow, loudspeakers, and audio mixing. This course provides the foundational theory for the other classes in the audio series, including production, recording, and sound reinforcement. (F, Sp, Su)

MTEC 121 Audio Recording I
Prerequisite: MTEC 120 2.0 minimum
Recommended: Basic Computer Skills and MTEC 220
A beginning course in audio recording that covers the basics of multitrack recording, both studio and remote. Emphasis is placed on microphone selection and placement, use of mixing consoles, and multitrack recorders for the recording session. (F, Sp)

MTEC 122 Sound Reinforcement
Prerequisite: MTEC 120 2.0 minimum
This is a first course in sound reinforcement. Students learn to design and set-up various reinforcement systems. Included are front-of-house, amplifiers, speakers, monitors, computer-controlled wireless, and the use of chain motors to suspend sound support systems. (Sp)

MTEC 130 Radio Production I
Prerequisite: Reading Level 5 and Writing Level 6
Survey of the radio broadcast industry including careers, qualifications, responsibilities, and station operation. Introduces basic studio production and on-air presentations. (F, Sp, Su)

MTEC 150 TV Production I
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Basic Computer Skills
This course places special emphasis on the components of effective visual communication. Pre-production processes related to program development, scriptwriting, storyboarding, lighting, and floor plot designs are emphasized. An introduction to television production processes are included in classroom activities. Class sessions contain instructional and performance exercises. (F, Sp)

MTEC 152 Video Production Techniques
Prerequisite: (MTEC 150 2.0 minimum and (MTEC 120 2.0 minimum or Concurrently) or FILM 118 2.0 minimum) and Reading Level 5 and Writing Level 6
Video Production Techniques is designed as an introductory experience in the process of single camera video production. This course will also provide the student with extensive experience in linear videotape editing. Class sessions will contain instructional and performance exercises which are practical applications of the course content. (F, Sp)

MTEC 200 Audio Production II
Prerequisite: MTEC 120 2.0 minimum
Recommended: Basic Computer Skills
An advanced audio production course providing audio theory and production practice. Topics include computer editing, the use of audio effects in production, additional production mixing, and audio post-production for video. Students learn to edit and mix using ProTools. An extensive survey of the audio production industry is included. (F, Sp)

MTEC 221 Audio Recording II
Prerequisite: MTEC 121 2.5 minimum
Recommended: Basic Computer Skills
A second course in audio recording that covers advanced techniques used in multitrack studio recording. Emphasis is placed on the use of multitrack studio and signal processing equipment for multitrack mixing as well as advanced location recording techniques. (Sp)

MTEC 222 Sound Reinforcement Practicum
Prerequisite: MTEC 122 2.5 minimum and Department Approval
A hands-on course that permits students to apply the theory and practice acquired in MTEC 122 to a large scale practical project. The Spring class offering provides sound reinforcement experiences for local musical theatre. The Summer section provides concert sound reinforcement for bands playing at Riverfront Park during July 4th festivities. (Sp, Su)

MTEC 230 Radio Production II
Prerequisite: MTEC 130 2.0 minimum
Recommended: Basic Computer Skills
This course emphasizes advanced training in studio and remote production techniques. Emphasis is placed on writing, producing, and performing for commercials, newscasts, and sports programs. (F, Sp)

MTEC 232 Radio Workshop
Prerequisite: MTEC 130 2.0 minimum and Department Approval
Recommended: Basic Public Speaking Skills or SPCH 120
An opportunity for practical experience through access to the campus radio facility. Students will work in a variety of station staff positions. Emphasis will be placed on developing media of a professional caliber that students can later use as portfolio or resume materials. (F, Sp, Su)

MTEC 240 Script/Copywriting for Media
Prerequisite: MTEC 110 2.0 minimum and WRIT 121 2.0 minimum
Recommended: Basic Computer Skills
This course will help the student develop fundamental writing skills used in preparing script materials for electronic media. Emphasis is placed on practical copyright techniques applicable to radio and television advertising, promotion, public service and news. (Sp)

MTEC 243 Ethics/Social Impact of Media
Prerequisite: MTEC 110 2.0 minimum and WRIT 121 2.0 minimum
Recommended: Basic Computer Skills
Ethics/Social Impact of Media explores the effects of the mass media on American culture and society. Topics such as privacy, censorship, violence, and portrayals of minorities and women are discussed. These discussions take place within an ethical reasoning framework. (F, Sp, Su)

MTEC 250 TV Production II
Prerequisite: MTEC 150 2.0 minimum
Recommended: Basic Computer Skills and MTEC 151
An advanced production course focusing on the development of the technical and creative skills necessary to direct the work of a studio production team. Production assignments are modeled after activities found in broadcast production environments. Additional academic exercises include interpretation and translation of script ideas into effective video programming. (Sp)
MTEC 251 Advanced Field Production 4
Prerequisite: MTEC 151 2.0 minimum or (MTEC 152 2.0 minimum and MTEC 153 2.0 minimum) or FLM 118 2.0 minimum and Reading Level 5 and Writing Level 6
Recommended: Basic Computer Skills
An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain instructional and critical analysis exercises of contemporary video programming. All production exercises are conducted outside of classroom sessions. Course assignments are evaluated on technical and artistic guidelines. (F)

MTEC 252 Lighting for Television/Video 3
Prerequisite: MTEC 150 2.0 minimum or THEA 111 2.0 minimum or FLM 118 2.0 minimum and Reading Level 5 and Writing Level 6
Recommended: MTEC 151
An advanced instructional seminar on lighting techniques for video and television production. Special emphasis is placed on developing creative and technical lighting approaches applicable to a wide range of program subjects. In-class examples and assignments are used for developing individual lighting techniques. (Sp)

MTEC 254 Television/Video Graphics 3
Prerequisite: MTEC 150 2.0 minimum
Recommended: Basic Computer Skills
This course is designed to provide the student with an introductory experience to the process of electronic graphic design for television, video, and multimedia production. Electronic Presentation Graphics places emphasis on learning the basics of several different types of graphic software, as well as developing the student's visual design capabilities in support of both television and video communication. (Sp)

MTEC 255 Video Workshop 2
Prerequisite: MTEC 151 2.0 minimum and Department Approval
Recommended: Basic Computer Skills
This course provides guided laboratory and practical production experience in the creation of professional video programming. Projects will include opportunities to work in a variety of production and post-production positions. Emphasis will be placed on developing course materials of a professional quality that can later be used as portfolio or resume materials. (F, Sp, Su)

MTEC 256 Media Internship 3
Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval
Restriction: Media Technology Majors
Recommended: 75% of the way through Media Technology Program
This course provides an opportunity for students to work in media and media technology settings outside of the classroom. Students will be placed in a professional position where they will have the opportunity to develop their technical and professional skills in a real-world environment. The course is designed to provide students with practical experience in the media industry. (F, Sp, Su)

MTEC 290 Special Projects 1-4
Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval
Restriction: Media Technology Majors
Recommended: 75% of the way through Media Technology Program
This course provides an opportunity for a group of learners to become involved in a common project that will allow each to develop additional skills or to hone present skills. Availability of academically appropriate projects and student interest determines the nature of the experience. (F, Sp, Su)

MUSIC - Music

MUSIC 100 Summer Chorus 1
Prerequisite: Department Approval
Recommended: Music Reading Skills
An ensemble of vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. Group performances occur at least once per year during summer semester. May be taken up to three semesters for credit. (Su)

MUSIC 101 Lansingsingers Vocal Ensemble 1
Prerequisite: Department Approval
Recommended: Music Reading Skills
An ensemble of vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. Group performances occur at least once per year during summer semester. May be taken up to three semesters for credit. (F, Sp)

MUSIC 102 Women's Chorus 1
Prerequisite: Department Approval
Recommended: Music Reading Skills
An ensemble of female vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. Group performances occur at least once per year during summer semester. May be taken up to three semesters for credit. (F, Sp)

MUSIC 104 LCC Satin Blues Ensemble 1
Prerequisite: Department Approval
Recommended: Music Reading Skills
A select female vocal ensemble focusing upon gospel and contemporary music for women's voices. Artistic and creative vocal skills and improvisation are developed through ensemble, small group and solo performance. Ensemble performances occur at least twice per year during summer semester. May be taken up to three semesters for credit. (F, Sp)

MUSIC 105 Private Lesson I 1
Prerequisite: None
Restriction: Music, Dance and Theatre Majors
This course is a private lesson, 40 minutes per week, for performing arts majors. Only music, dance, or theatre majors are eligible to enroll. This course may be taken up to six semesters for credit. (F, Sp, Su)

MUSIC 106 Private Lesson II 2
Prerequisite: None
Restriction: Music, Dance and Theatre Majors
This course is a private lesson, 60 minutes per week, for performing arts students. Only music, dance, or theatre majors are eligible to enroll. This course may be taken up to six semesters for credit. (F, Sp, Su)
MUSC 108 Concert Choir
1
Prerequisite: Department Approval
Recommended: Music Reading Skills
A group of singers who perform a wide range of music, sacred and secular. This group performs regularly in various settings throughout the year. Students are required to attend five performances. May be taken up to six semesters for credit toward a degree. (F, Sp)

MUSC 119 Lansing Concert Band
1
Prerequisite: Instrumental Audition - Lansing Concert Band
A community band serving as the official band of the City of Lansing. The group performs throughout the year and plays all types of music but primarily concert band literature. All performances are free and open to the public. Students are required to attend five performances. May be taken up to six semesters for credit. (F, Sp, Su)

MUSC 121 Percussion Ensemble
1
Prerequisite: Department Approval
Recommended: Music Reading Skills
The percussion ensemble rehearses and performs pieces in a variety of styles and periods. Rhythmic reading skills and percussion techniques will be honed and developed further. This ensemble performs two to four times per year. The course may be taken up to six semesters for credit. (F, Sp)

MUSC 122 Guitar Ensemble
1
Prerequisite: Department Approval
Recommended: Music Reading Skills
Experiences guitar in a wide variety of styles (classical, jazz, and contemporary) for large and small ensembles. Emphasizes electric and acoustic instruments. The group performs throughout the year and plays all types of music but primarily guitar music. Students are required to attend five performances. May be taken up to six semesters for credit. (F, Sp)

MUSC 123 Jazz Ensemble
1
Prerequisite: Department Approval
Recommended: Music Reading Skills
The jazz ensemble rehearses and performs pieces of various styles and from various periods. The ensemble is designed to provide students who play jazz and other band music with an opportunity to develop their musicianship. The group performs two to four times per year. Students are required to attend five performances. May be taken up to six semesters for credit. (F, Sp)

MUSC 138 Class Piano Major I
2
Prerequisite: Reading Level 5 and Writing Level 4
Restriction: Music Majors
This course is designed for the student to develop the practical keyboard skills needed to become a music major. Students will gain keyboard proficiency through sight-reading, ear training, and other activities. The group performs throughout the year. Students are required to attend five performances. (F, Sp)

MUSC 139 Class Piano Major II
2
Prerequisite: MUSC 138 2.0 minimum and Reading Level 5 and Writing Level 4
Restriction: Music Majors
This course is designed to provide students with a more advanced understanding of keyboard music. Students will gain keyboard proficiency through sight-reading, ear training, and other activities. The group performs throughout the year. Students are required to attend five performances. (F, Sp)

MUSC 143 Beginning Piano I - Summer
1
Prerequisite: None
Course assumes some prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords are the focus for this course. May be taken up to three semesters for credit. (Su)

MUSC 144 Beginning Piano I
2
Prerequisite: Reading Level 3 and Writing Level 4
Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords are the focus for this course. May be taken up to three semesters for credit. (F, Sp)

MUSC 145 Beginning Piano II
2
Prerequisite: MUSC 144 2.0 minimum and Reading Level 3 and Writing Level 4
Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords are the focus for this course. May be taken up to three semesters for credit. (F, Sp)

MUSC 154 Class Voice Commercial I-Summer
1
Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/commercial music. Breathing, posture, alignment, line production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend five performances. May be taken up to three semesters for credit. (Su)

MUSC 155 Class Voice Commercial I
2
Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/commercial music. Breathing, posture, alignment, line production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend five performances. May be taken up to three semesters for credit. (F, Sp)

MUSC 156 Class Voice Commercial II
2
Prerequisite: MUSC 155 2.0 minimum
The advanced course in a series of two, this course will refine techniques introduced in MUSC 155. Students will prepare a final public performance. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)

MUSC 157 Applied Lesson I
2
Prerequisite: Music Major Audit
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions are held the Friday prior to Fall Semester or as requested during Fall and Spring Semester juries. This course may be taken up to three semesters for credit. (F, Sp, Su)

MUSC 158 Applied Lesson II
2
Prerequisite: MUSC 157 2.0 minimum or Music Major Audit
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by successful completion of the MUSC 157 course. This course may be taken up to three semesters for credit. (F, Sp, Su)

MUSC 163 Aural Skills I
1
Prerequisite: None
Co-requisite Course(s): MUSC 195
This course allows students to develop their aural capacity through exercises in beginning melodic and rhythm reading. The ability to sing melodies and sight-read the use of solfege will also be developed. This is the first of two courses in freshman aural skills. (Sp)

MUSC 164 Aural Skills II
1
Prerequisite: MUSC 163 2.0 minimum
Co-requisite Course(s): MUSC 194
This course allows students to develop their aural skills through intermediate exercises in melodic and rhythm reading. The ability to sight-read melodies and the use of solfege continue to be developed. This course is the second in a sequence of two freshman music major requirements. (F)

MUSC 169 Intro to Musicanship I
2
Prerequisite: None
This course is for beginning musicians to gain an understanding of notation and reading pitch, rhythm, and music terminology and theory. Students are introduced to musical scales, key signatures, intervals, and chords. Students are required to attend live performances. (F, Sp)

MUSC 169 Intro to Musicanship II
2
Prerequisite: MUSC 168 2.0 minimum or Music Theory Placement Test
This course is the second in a pair of courses for music majors to further their understanding of music notation and theory fundamentals. MUSC 169 builds on material covered in MUSC 168. Students will learn to construct melodies, create phrases, and to harmonize a given or original melody. Students are required to attend live performances. (F, Sp)

MUSC 178 Beginning Diction for Singers
2
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: Music Reading Skills
Singers are trained in the International Phonetic Alphabet, assisting them in the correct pronunciation of English and foreign languages as applied to vocal performance. Primary focus is on English and Italian IPA skills corresponding with appropriate song literature. Secondary emphasis may include French or German IPA skills. (F, Sp)
MUSC 181 Class Voice I - Summer 1
Prerequisite: None
The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. May be taken up to three semesters for credit. (Su)

MUSC 182 Class Voice I 2
Prerequisite: None
The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)

MUSC 183 Class Voice II 2
Prerequisite: MUSC 182.0 minimum
The advanced course in a series of two. This course will refine techniques, such as breathing, posture, diction, tone production, and stage presence, introduced in MUSC 182. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)

MUSC 187 Class Guitar - Summer 1
Prerequisite: None
This course is for beginners and experienced players who desire note-reading skills. Folk, blues, and classical guitar traditions are presented using basic pedagogical techniques. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. (Su)

MUSC 188 Class Guitar 2
Prerequisite: None
This course is for beginners and experienced players who desire note-reading skills. Folk, blues, and classical guitar traditions are presented using basic pedagogical techniques. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. The course may be taken up to four semesters for credit. (F, Sp)

MUSC 193 Basic Musicianship I 3
Prerequisite: (MUSC 168.0 minimum or Music Theory Placement Test) and Reading Level 5
Co-requisite Course(s): MUSC 168
The first in a sequence of two courses in freshman music theory as required for four-year college music degrees. Notation and analysis of rhythm, pitch, intervals, scales, modes, keys, basic triads, their inversions, and fundamental rules of part-writing are among the many skills explored. (F)

MUSC 194 Basic Musicianship II 3
Prerequisite: (MUSC 168.0 minimum or Music Theory Placement Test) and Reading Level 5
Co-requisite Course(s): MUSC 164
This course presents intermediates music theory principles including diatonic and chromatic harmony, four-part writing, counterpoint, basic music forms, and analysis. This course is second in a sequence of two. It serves as a freshman requirement for a four-year college music degree. (Sp)

MUSC 197 Intro to Music Technologies 2
Prerequisite: None
Recommended: Familiarity with Computers; Music Reading Skills
This course introduces students to the role of computers in music. Topics include basic personal computer skills, industry standard music notation software and techniques, an exploration of the Musical Instrument Digital Interface (MIDI), music sequencing, audio editing, and composition and orchestration with computers and electronic instruments. (F, Sp, Su)

MUSC 199 Music Appreciation 2
Prerequisite: Reading Level 5 and Writing Level 4
Designed for non-music majors, this course develops well-informed, focused listening. Students are acquainted with representative composers, compositions, and musical characteristics of a variety of style periods from early music through 20th Century music. Students are required to attend live performances. (F, Sp, Su)

MUSC 200 Music Fund forElem Teachers 3
Prerequisite: None
Recommended: Music Reading Skills
This course addresses the cognitive and performance music skills necessary for early childhood, elementary and special education majors. Successful teaching methods for singing and focused listening will be presented alongside classroom performance on the piano and recorder. MUSC 200 may be taken as an elective. (F, Sp)

MUSC 219 Introduction to Music Therapy 3
Prerequisite: Reading Level 5 and Writing Level 4
An overview of the history, philosophy, and methodologies and practices of Music Therapy and the use of music in therapeutic aims of restoring, maintaining and improving both mental and physical health. Exploration and assessment of various clinical techniques and the disorders/patients populations they address. Off-campus field experiences required. (F, Sp)

MUSC 221 Sacred Music: History & Styles 2
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Music Reading Skills
Investigation of sacred musical traditions and styles with global, cultural, interdenominational, and inclusive perspectives. Contextual overviews of liturgics, rites and diverse uses of music in worship are explored. Other issues encompass the plurality of world chant traditions, ethnomusicology, religious/worship contemporary music-making, and technology as significant forces in sacred music. (F)

MUSC 222 Techniques in Sacred Music 2
Prerequisite: Reading Level 5
Recommended: Music Reading Skills
Techniques and skills for the practice of sacred music, including: principles of conducting; effective organization and administration of quality programs; appraisal of pertinent resources; planning worship services; and, fundamentals of recruiting, organizing, and budgeting. Repertoire and training methods for various vocal/instrumental ensembles and soloists/cantors will also be addressed. (Sp)

MUSC 230 Independent Study in Music 1-2
Prerequisite: Department Approval
Restriction: Music Majors
An opportunity for self-directed learners to explore topics related to, but not taught in, the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp)

MUSC 232 Music Seminar 1
Prerequisite: Department Approval
Student will be given the opportunity to attend master classes on various related topics or perform in a production on the main stage or comparable space. Limited to individuals who have been selected as cast members or approved for master class. (F, Sp, Su)

MUSC 233 Music Seminar 2
Prerequisite: Department Approval
Student will be given the opportunity to attend master classes on various related topics or perform in a production on the main stage or comparable space. Limited to individuals who have been selected as cast members or approved for master class. (F, Sp, Su)

MUSC 240 World Music History I 4
Prerequisite: Reading Level 5 and Writing Level 6
An historical and analytical survey of music and the ways civilizations understand music in addressing cultural issues. Characteristic genres, styles, composers and literature of Western art music from Antiquity through 1750 are studied with cross-cultural comparisons to non-Western musics of Asia, India, Middle East, Americas, and world chant traditions. (F)

MUSC 241 World Music History II 4
Prerequisite: Reading Level 5 and Writing Level 6
An historical, analytical and cultural survey of music from 1750 to the present. Characteristic genres, styles, composers and their musical expressions are studied regarding developments of Western art music, popular culture, comparisons with non-Western musics (Africa, Asia, and the Americas), as well as the emergence of world musics today. (Sp)

MUSC 242 American Musical Theatre 2
Prerequisite: Reading Level 5 and Writing Level 4
Survey of the stylistic trends and developments in American Musical Theatre from its roots to the present with attention to musical, literary and dramatic forms. Stylistic, cultural and social perspectives of the repertory are explored through informal listening, multi-media lecture presentations, live performances, and an active-learning environment. (F)
MUSC 246 - History of Blues and Jazz  
Prerequisite: Reading Level 5  
An overview of the emergence, development and relevance of two of America's most genuine musical artforms: Blues, and jazz. Musical and social, cultural and sociological investigations of these artforms provide a mirror to the ever-changing popular American soundscape. (Sp)  

MUSC 247 - History of Rock and Roll  
Prerequisite: Reading Level 5  
Survey of the origins, elements, developments, and reflections of Rock and Roll from its roots in the 1950's to the present. Major trends and artists are considered in stylistic, social, commercial, and global perspectives. Informal listening introduced; major creators, performances, genres, expressions, and reflections of an increasingly global and technological musical world. (Sp)  

MUSC 253 - Business of Music  
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 agencies, concert promotions, and unions. Students are required to attend live performances. (F)  

MUSC 254 - Band Management  
Prerequisite: None  
This course is designed to assist the professional musician or manager in creating or improving a performing band. Major aspects of band management are covered, including intra-band arrangements, contracts, negotiations, format and material choice, equipment, finances, promotion and sales, road management, and basic organizational information. Students are required to attend live performances. (Sp)  

MUSC 257 - Applied Lesson III  
Prerequisite: MUSC 158 or Music Major Audition  
Restriction: Music Majors  
This course is a private lesson. 50 minutes per week, for music majors. Enrollment is allowed upon successful completion of the MUSC 158 juried performance. This course may be taken up to three semesters for credit. (F, Sp, Su)  

MUSC 258 - Applied Lesson IV  
Prerequisite: MUSC 257 or Music Major Audition  
Restriction: Music Majors  
This course is a private lesson. 50 minutes per week, for music majors. Enrollment is allowed upon completion of the MUSC 257 juried performance. This course may be taken up to three semesters for credit. (F, Sp, Su)  

MUSC 263 - Aural Skills III  
Prerequisite: MUSC 164 or Music Major  
Co-requisite Course(s): MUSC 233  
This course is the continuation of the first year of aural skills training. The student will proceed to more advanced training in sight-singing and ear-training. This course is the first in a sequence of two sophomore aural skills courses. (F)  

MUSC 264 - Aural Skills IV  
Prerequisite: MUSC 263  
Co-requisite Course(s): MUSC 254  
Advanced training in aural skills will continue as this course is the second in a sequence of two sophomore aural skills courses. Melodic and harmonic dictation involving chromatics and modulation will be studied, as well as more advanced sight-singing exercises. (Sp)  

MUSC 270 - Rock Guitar  
Prerequisite: None  
A presentation on fundamental rhythm and lead guitar techniques and music theory concepts applicable to rock music from its rhythm and blues origin to the present, as well as other related popular styles. Students must provide own guitar. Students required to attend live performances. May be taken up to three semesters for credit. (F, Sp, Su)  

MUSC 276 - Lyric Writing  
Prerequisite: Reading Level 5 and Writing Level 4  
This course introduces students to the craft of writing song lyrics. The work of professional songwriters is discussed. The students' work will be examined and discussed. Students are required to attend live performances. (F)  

MUSC 280 - Private Composition  
Prerequisite: Music Major Audition and MUSC 194 or Music Major  
Restriction: Music Majors  
Private coaching/instruction for music majors. 40 minutes per week, in musical composition, giving attention and suggestion to melody, harmony, chord substitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp, Su)  

MUSC 293 - Advanced Musicanship I  
Prerequisite: MUSC 194 or Music Major  
Co-requisite Course(s): MUSC 263  
This course is a continuation of elements of music theory acquired in MUSC 193 and 194. Students will learn advanced elements of harmony such as modulation. Atriglial II chords, augmented sixth chords, and the voice leading techniques. The principles of musical form will be introduced. Students are required to attend live performances. (F)  

MUSC 294 - Advanced Musicanship II  
Prerequisite: MUSC 293 or Music Major  
Co-requisite Course(s): MUSC 264  
MUSC 294 concerns the study of major classical forms including: variation, sonata, rondo, and concerto forms. Counterpoint, 18th century harmony, bass, and counterpoint, and twelve-tone theory will be studied. This is the second of two sophomore level music theory courses. Students are required to attend live performances. (Sp)  

MUSC 298 - Electronic and Computer Music  
Prerequisite: MUSC 197 or Music Major  
Recommended: Computer Experience: Music Reading Skills  
Students develop and create original musical compositions applying a variety of electronic and computer-based media. Projects include manipulating MIDI (Musical Instrument Digital Interface) data, digital audio effects processing, advanced sequencing, waveforms, and the use of pitch-based sound, digital synthesis, editing and storage of synthesizer patches, digital music production, and spatialization. (F, Sp, Su)  

NURS - Nursing  

NURS 119 - Special Topics in Nursing  
Prerequisite: None  
This course offers students the opportunity to learn new nursing skills and knowledge. Specific up-to-date content will vary with each seminar and will be related to the nursing profession. (F, Sp, Su)  

NURS 150 - Fundamentals in Nursing Care  
Prerequisite: Admission to Nursing Program and Reading Level 4 and Writing Level 6  
The focus of this course is the nursing process as a problem-solving technique for meeting basic human needs. The concepts of perspective care and cancer are presented, and the aging process is emphasized throughout. Clinicals are in long-term care facilities and hospitals. (F, Sp)  

NURS 160 - Acute Nursing Care  
Prerequisite: NURS 150 and NURS 200  
Co-requisite Course(s): NURS 150  
Students are assisted in using the nursing process in the care of adults adapting to common acute health problems, Pneumonology and nursing interventions affecting the cardiovascular, respiratory, endocrine, gastrointestinal, neurological, and musculoskeletal body systems are presented. Clinical in acute care hospital systems. (F, Sp)  

NURS 165 - Maternity Nursing Care  
Prerequisite: NURS 150 and NURS 200  
Co-requisite Course(s): NURS 150  
Assessment and nursing care of the childbearing family is the focus of this course. Concepts of family, therapeutic communication, cultural diversity, and human sexuality are discussed. Basic needs and developmental tasks of early childhood through adolescence are included. Clinical is in maternity units of hospitals and in community settings. (F, Sp)
NURS 195 Long-term Care Nurse Intern
Prerequisite: Department Approval
Long-term Care Nurse Intern is a bridge course focusing on new LPN graduates to transition from graduate LPN to providing nurse caring for long-term care residents. Acute and chronic conditions specific to the elderly are presented via lecture, case studies and clinical practicum integration, and build upon the student’s previous knowledge. (F, Sp, Su)

NURS 200 Pharmacology
Prerequisite: BIOL 202 2.5 minimum (previously PHGY 202) or Concurrently
This course is recommended for students who wish to transfer to a BSN program. Drug categories are discussed in-depth as well as nursing responsibilities associated with medication administration. (F, Sp, Su)

NURS 210 LPN/Paramedic to RN Transition
Prerequisite: Department Approval and Reading Level 5 and Writing Level 6
Recommended: Current Work Experience, Current BLS and OSHA
The Transition Course is designed to assist the returning LPN/Paramedic student in the adjustment to the curriculum leading to an Associate Degree in Nursing. Roles, functions, and practice settings for the LPN/Paramedic and Associate Degree Nurse will be compared and discussed. (F, Sp, Su)

NURS 260 Mental Health Nursing Care
Prerequisite: NURS 165 2.5 minimum and NURS 165 2.5 minimum and PSYC 205 2.5 minimum
Co-requisite Course(s): NURS 265
The student is expected to use the nursing process in caring for clients adapting to psychosocial health problems including the high risk mother and infant. Emphasis is placed on therapeutic communication skills. Clinics are in psychiatric units of acute care hospitals and day treatment facilities and community sites. (F, Sp)

NURS 265 Pediatric Nursing Care
Prerequisite: NURS 185 2.5 minimum and NURS 185 2.5 minimum and PSYC 205 2.5 minimum
Co-requisite Course(s): NURS 290
Concepts of illness in children are discussed utilizing a systems perspective. Students are expected to integrate the nursing process and course concepts into their care of children in hospital acute care, maternity units, pediatric units, and other selected health care settings. (F, Sp)

NURS 280 Advanced Chronic Nursing Care
Prerequisite: BIOL 203 2.5 minimum (previously MCR 203) and NURS 260 2.5 minimum and NURS 265 2.5 minimum
Co-requisite Course(s): NURS 285 and NURS 290
Recommended: BIOL 204 (previously MCR 204)
The student will use the nursing process in caring for adult clients adapting to chronic health problems. Care of client with immune system problems, hypotheses, HIV, diabetes mellitus, and heart failure is discussed. Clinical experiences are in the acute care facility and clinical visits to community agencies. (F, Sp)

NURS 295 Advanced Acute Nursing Care
Prerequisite: BIOL 203 2.5 minimum (previously MCR 203) and NURS 260 2.5 minimum and NURS 265 2.5 minimum
Co-requisite Course(s): NURS 285 and NURS 290
The student will use the nursing process in caring for adult clients with critical health problems. Homeostatic responses to pathology of the cardiovascular and respiratory systems; fluid-electrolyte shifts, and acid-base imbalances are discussed. Advanced assessment and patient care are incorporated throughout. Clinical experiences include acute care and leadership/management opportunities. (F, Sp)

NURS 290 Leadership in Nursing Care
Prerequisite: BIOL 203 2.5 minimum (previously MCR 203) and NURS 260 2.5 minimum and NURS 265 2.5 minimum
Co-requisite Course(s): NURS 290 and NURS 285
The role of the nurse as manager of care and licensed health professional is presented. Students apply the nursing process to various management systems within acute care settings. Current issues and trends in health care are a strong emphasis of this course. (F, Sp)

NURS 295 Acute Care Nurse Intern
Prerequisite: Department Approval
NURS 295 is a bridge course focusing on new RN graduates to facilitate transition from graduate to practicing nurse in the care of the critically ill patient. This course integrates advanced level course content, clinical laboratory experiences, and "real-world" work experiences under the guidance of an experienced RN preceptor. (Sp, Su)

OADM 102 Editing Business Documents
Prerequisite: Reading Level 5 and Writing Level 4
This course introduces students to applied editing skills for business documents. Locating and correcting errors in typing, word division, format, numbers, word usage, capitalization, and punctuation are emphasized. Grammar rules will be reviewed as needed. Some classroom activities require use of a computer lab. (F, Sp, Su)

OADM 105 Employability Skills
Prerequisite: None
Recommended: IT Job Readiness Certificate students should register for OADM 106 Concurrently
Students will develop basic employability skills necessary to function in a work environment with an emphasis on the use of technology and on-the-job learning. The course is designed for those planning to complete the Information Technology Job Readiness certificate program or the Office Administration Internship course. (F, Sp)

OADM 106 Keyboarding Basics
Prerequisite: None
Recommended: IT Job Readiness Certificate students should register for OADM 105 Concurrently
Students will develop the introductory keyboarding skills necessary to function in a work environment. The course prepares students for productivity software coursework and is designed for those planning to complete the Information Technology Job Readiness certificate program. (F, Sp)

OADM 108 Input Technologies/Business
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: Prior Keyboarding Experience
This course is designed to expose students to a variety of emerging input mediums for the office environment. Students will learn speech-to-text input using voice recognition software and handwriting input using Microsoft Office and a graphics tablet. (F, Sp, Su)

OADM 193 Human Relations in Work Place
Prerequisite: Reading Level 5 and Writing Level 4
This course emphasizes the importance of human relations in the workplace. Through a combination of case studies, self-analysis, inventories, and discussions, students explore the dynamics and interrelatedness of career and personal success. Course topics include self-understanding, dealing effectively with people, conflict resolution, problem-solving, career planning, and lifelong learning. (F, Sp, Su)

OADM 197 Medical Vocabulary
Prerequisite: Reading Level 5 and Writing Level 4
This course provides instruction in spelling, definition structure, and concepts of medical terminology using a body-systems approach. Good study skills are required. (F, Sp, Su)

OADM 188 Health Information Management
Prerequisite: OADM 197 2.0 minimum and Reading Level 5 and Writing Level 4
In this course, students will explore the diversity of health information management settings. Topics include coding and classification, computerization of systems in health care, quality assurance and utilization management, risk management, and legal issues. Developments in telemedicine, health informatics, and other technological trends are also discussed. (Sp)

OADM 203 Professional Office Procedures
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: Microsoft Office Experience
Students will explore and develop the workplace behaviors and technical skills required of administrative support personnel. Course topics include organizing and planning functions, maintaining equipment and supplies, managing records and files, communications, document production, and information distribution. Use of office and information technologies will be emphasized. (F, Sp)

OADM 206 Legal Vocabulary/Translation
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: Word Processing Experience
This course provides the legal language foundation to familiarize students with the commonly used legal terms in the workplace. The production of reliable communications using transcription equipment and word processing software is emphasized. (F)
OADM 207 Medical Transcription
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: (OADM 107 or CHSE 120 or CHSE 121) and (BIOL 145 or
Biol 151 or BIOL 211) andTyping Experience
This course is designed to develop transcription skills in the transcription of
basic health care dictation, incorporating skills in English language, technology, medical
knowledge, proofreading, editing, and research while meeting accuracy and pro-
ductivity standards. (F, Sp)

OADM 206 Legal Citations/Document Prep
Prerequisite: OADM 206 2.0 minimum and Reading Level 5 and Writing Level 4
Recommended: Word Processing Experience
This course introduces legal citations and the preparation of legal documents in
various areas of law. Correct citation practice and proper formatting and use of
legal language in document production are stressed. (Sp)

OADM 210 Medical Coding Concepts
Prerequisite: OADM 197 2.0 minimum and OADM 198 2.0 minimum and
Reading Level 5 and Writing Level 4
This course focuses on medical coding concepts in the health care system and
deals exclusively with abstracting and coding information from the patient record
to optimize reimbursement. The course also provides an opportunity to build
the foundation for a future career in medical coding. (F, Sp)

OADM 215 Information Records Mgmt I
Prerequisite: (CABS 133 2.0 minimum or Concurrently) and Reading Level 5
and Writing Level 4
This course includes an overview of records management; document mainte-
nance at each stage of the records cycle; use of the Internet for RM projects;
selection of proper equipment, service bureaus, and offsite storage facilities;
and procedures for control of automated records technology in a systems environment.
Students will complete computer applications modules using Microsoft Access. (F, Sp)

OADM 216 Information Records Mgmt II
Prerequisite: (CABS 133 2.0 minimum or Concurrently) and Reading Level 5
and Writing Level 4
This course focuses on the establishment and evaluation of an information/records
management program, from preparing an inventory to establishing long-term
archival storage for electronic as well as paper media. Knowledge of various gov-
ernment and industry standards will be used to determine the parameters within
which an information/records management program should be established. (F)

OADM 220 Admin Mgmt in Organizations
Prerequisite: Reading Level 5 and Writing Level 4
This course examines the management of administrative services in the work
place and the role of the Administrative Office Manager. Topics include office func-
tions, job analysis, ergonomic planning, and the design, installation and evaluation of
office systems. (F, Sp)

OADM 222 Advanced Medical Transcription
Prerequisite: OADM 207 2.0 minimum
This course is designed for transcription of advanced healthcare dictation.
Students will be required to utilize advanced proofreading, editing, and research
skills while meeting increased accuracy and productivity standards. (Sp, Su)

OADM 226 Financial Mgmt in Health Care
Prerequisite: CABS 135 2.0 minimum and OADM 198 2.0 minimum
This course focuses on concepts of managed care and its significance in the
health care system. Managed care and its impact on financial management, deci-
sion making, and information requirements of the health care system are empha-
sized. Students will view managed care, including ambulatory care, from the
perspective of both health insurance companies and providers. (Sp)

OADM 240 Office Internship
Prerequisite: Department Approval
Co-requisite Course(s): OADM 105
Recommended: See Internship Coordinator Before Registering
This course is designed to provide on-the-job training relating to an Office
Administration major. Students obtain employment in an approved training station
to earn credits for satisfactory work performance. Minimum of 120 hours work-
site experience is required. (F, Sp, Su)

OADM 275 Diversity in Business
Prerequisite: Reading Level 5 and Writing Level 4
This course is designed to help students become familiar with, understand, and
appreciate people of different cultures; to promote a more effective basis for work-
ing together in the business world. Emphasis and application is placed upon bus-
ness etiquette and business practices as they differ in various cultures. (F, Sp)

OADM 291 Office Systems Capstone
Prerequisite: OADM 288 2.0 minimum or OADM 275 2.0 minimum
This capstone course concludes associate degree requirements for Office
Administration curriculum. The course is designed for the administrative profes-
sional who is preparing for the Certified Professional Secretary (CPS) Examina-
tion. Topics include current trends in office practices and procedures, including
finance, business law, economics, communications, and management, as well as
current developments in office systems and technology. (F, Sp)

PARA - Paramedics

PARA 221 Paramedic Medical Trauma I
Prerequisite: Admission to Paramedic Program and Reading Level 5 and
Writing Level 6 and Math Level 3
Co-requisite Course(s): PARA 221 and PARA 241 and PARA 251 and PARA 261
This course provides information about the pre-hospital management of medical
and traumatic conditions at the advanced life support level. Emphasis is placed on
pathophysiology, recognition of signs and symptoms, review of basic life support
management techniques, and strategies for advanced life support care. (F)

PARA 222 Paramedic Medical Trauma II
Prerequisite: PARA 221 3.0 minimum
Co-requisite Course(s): PARA 222 and PARA 242 and PARA 252 and PARA 262
This course incorporates previously gained knowledge gained at the basic EMT level and
PARA 221. Provides material for management of prehospital emergencies includ-
ing assessment and management of neurological, behavioral, abdominal, meta-
abolic, cardiac, and multiple trauma patients. The principles of trauma, management of
mass casualty incidents, and telecommunications are also included. (Sp)

PARA 231 Paramedic Cardiology I
Prerequisite: Admission to Paramedic Program
Co-requisite Course(s): PARA 221 and PARA 241 and PARA 251 and PARA 261
This course provides the paramedic student with information about cardiovascular
anatomy, physiology, and electrophysiology. Emphasis is placed on rhythm inter-
pretation, recognition of life threatening arrhythmias, electrical interdiction and
other prehospital patient management strategies. (F)

PARA 232 Paramedic Cardiology II
Prerequisite: PARA 231 3.0 minimum
Co-requisite Course(s): PARA 222 and PARA 242 and PARA 252 and PARA 262
Builds on information learned in PARA 231 as a basis for more advanced arrhyth-
mia interpretation. Management of cardiac arrest including medications, car-
dioversion, transcutaneous pacing, and defibrillation will be a major emphasis.
Rhythm diagnosis, 12-lead ECG interpretation, and other advanced procedures and
arrhythmias will be presented. Application of theory, judgment, and decision-mak-
ing strategies are emphasized. (Sp)

PARA 241 Paramedic Pharmacology I
Prerequisite: Admission to Paramedic Program
Co-requisite Course(s): PARA 221 and PARA 231 and PARA 251 and PARA 261
Provides the student with information necessary for the preparation, calculation of
doses, and administration of drugs used in the prehospital setting, including classi-
fication, action, use, and side effects. Information about other commonly pre-
scribed drugs is also provided. (F)

PARA 242 Paramedic Pharmacology II
Prerequisite: PARA 241 3.0 minimum
Co-requisite Course(s): PARA 222 and PARA 232 and PARA 252 and PARA 262
Provides the paramedic student with additional in-depth information on Advanced
Cardiac Life Support drugs including classification, action, use, and side effects.
Information about other commonly used and prescribed drugs is also provided. (Sp)

PARA 251 Paramedic Skills I
Prerequisite: Admission to Paramedic Program
Co-requisite Course(s): PARA 221 and PARA 231 and PARA 241 and PARA 261
Provides an introduction to paramedic skills required for advanced life support and
provides the opportunity to apply theory to field practice in a discussion and skills
lab setting. Skills will be demonstrated, practiced during supervised labs, and
tested for competency. The student must have excellent basic EMT skills upon entry. (F)
PARA 252 Paramedic Skills II
Prerequisite: PARA 251 3.0 minimum
Co-requisite Course(s): PARA 222 and PARA 232 and PARA 242 and PARA 260
A continuation of Skills I with the introduction of additional skills and continued application of theory. Measurement criteria for skills competencies becomes more stringent and students must become competent in all paramedic skills in preparation for the field internship component. (Sp)

PARA 261 Paramedic Clinical I
Prerequisite: Admission to Paramedic Program
Co-requisite Course(s): PARA 221 and PARA 231 and PARA 241 and PARA 261
Provides clinical experience for paramedic students in areas including nursing home; hospital units such as emergency department, critical care units, burn units, obstetrics, pediatrics, and psychiatric units; and designated EMS agencies under the supervision of licensed paramedics. Students are also evaluated in the management of simulated emergencies. (F)

PARA 262 Paramedic Clinical II
Prerequisite: PARA 261 3.0 minimum
Co-requisite Course(s): PARA 222 and PARA 232 and PARA 242 and PARA 253
Provides clinical experience for paramedic students in areas including hospital units such as emergency departments, critical care units, obstetrics, pediatrics, and psychiatric units; and designated EMS agencies under the supervision of licensed paramedics. Students are also evaluated in the management of simulated emergencies. (Sp)

PARA 253 Paramedic Internship
Prerequisite: PARA 221 3.0 minimum and PARA 231 3.0 minimum and PARA 241 3.0 minimum and PARA 251 3.0 minimum and PARA 261 3.0 minimum
This course provides a field internship component with an advanced life support agency. Students are assigned to a paramedic training officer to provide total patient care and other professional duties under direct supervision. Training and testing in advanced cardiac life support is also completed. (Su)

PEAQ - Physical Fitness Aquatics

PEAQ 100 Swimming; Primary Skills
Prerequisite: None
This is an introductory swimming course which focuses on the development of basic swimming strokes, rhythmic breathing, survival swimming, and beginning diving skills. (F, Sp, Su)

PEAQ 101 Swimming; Stroke Development
Prerequisite: None
Recommended: PEAQ 100
This course stresses development of skills in front crawl and backstroke. Students will be introduced to the backcrawl, breaststroke, and butterfly with strong concentration on rhythmic breathing. (F, Sp, Su)

PEAQ 104 Swimming/Training
Prerequisite: None
This course is designed for persons interested in skill development in all competitive swimming strokes as well as in a fitness program design. The student should be able to swim 500 yards in 11 minutes. (F, Sp, Su)

PEAQ 106 Water Walking/Toning
Prerequisite: None
This course utilizes a variety of walking and running moves in shallow or deep water to enhance cardiovascular fitness. Toning exercises for arms, abdominal, and thighs are used extensively. Non-balletic moves are emphasized. (F, Sp, Su)

PEAQ 107 Water Exercise I
Prerequisite: None
This course utilizes a variety of movements performed in shallow or deep water, to improve cardiovascular fitness and flexibility. No swimming skills required. (F, Sp, Su)

PEAQ 110 Hydro-Fit Exercise I
Prerequisite: None
This course is designed to give the student an overall water fitness workout with little impact to joints or back. The class uses Hydro-Fit buoyancy equipment to tone and strengthen muscles, develop coordination, and increase flexibility. (F, Sp, Su)

PEAQ 111 Hydro-Fit Exercise II
Prerequisite: None
Recommended: PEAQ 110
This is a water fitness program using water resistance to tone and strengthen muscles, develop coordination and increase flexibility by using Hydro-Fit exercise equipment. Emphasis is placed on increasing abdominal, shoulder, arm and lower body strength. (This class is similar to Hydro-Fit I, but meets three times per week.) (F, Sp, Su)

PEAQ 112 Scuba
Prerequisite: None
This course is a basic course in scuba diving. The course includes both classroom and pool training instruction. Upon successful completion of the class, the student is eligible for scuba certification following open water training. (F, Sp, Su)

PEAQ 114 Parent/Infant Water Adjustment
Prerequisite: None
This course places emphasis on parent/infant water adjustment, safety and fun. Emphasis is placed on development of water experience and improvement of motor skills and coordination. (Infant ages between 6 months to 2 years) (F, Sp)

PEAQ 115 Parent/Toddler Water Adjustment
Prerequisite: None
Recommended: PEAQ 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 2 to 5 years old, depending upon skill development and/or instructor approval. (F, Sp)

PEAQ 116 Parent/Child Swim
Prerequisite: None
Recommended: PEAQ 115
This course focuses on parent/child water skill development, socialization skills, and safety. Individualized instruction is given for advancement of motor skill and coordination in the aquatic environment. Children should be 4 to 5 years old and/or instructor's approval. (F, Sp)

PEAQ 118 Arthritis Aquatics
Prerequisite: None
This course will give the student exercises for range of motion in comfortable water temperatures and will improve and help maintain flexibility and well-being. Arthritis Foundation approved program. (F, Sp)

PEAQ 119 Scuba Certification Class
Prerequisite: PEAQ 112 2.0 minimum or PEAQ 110 2.0 minimum
This course is designed to allow students who have completed scuba PEAQ 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)

PEAQ 120 Basic Lifeguarding
Prerequisite: None
This course is designed to provide the necessary minimum skills of training to qualify as an entry-level lifeguard. (F, Sp)

PEAQ 121 Lifeguard Training
Prerequisite: None
This course is designed to provide the necessary minimum skills training for a person to qualify as a non-surf lifeguard. (F, Sp)

PEAQ 122 Water Safety Instruction
Prerequisite: None
This course is designed to assist in teaching basic aquatic skills for instructors. Teaching modalities and how different students learn is covered. (F, Sp)

PFDA - Physical Fitness; Dance

PFDA 142 Ballroom Swing I
Prerequisite: None
Introduction to the study of ballroom swing including partnership techniques, dance posture, basic patterns, music and style of the Swing dances. Includes introduction to dances using different styles and speeds of music such as East Coast swing, West Coast swing, jitterbug, and jive. Enrollment with a partner is strongly recommended. (F, Sp, Su)
PFDA 147 Latin Ballroom I
Prerequisite: None
This course includes an introduction to partnership technique, dance posture, basic patterns and music for Latin partnership dances. Dances will be selected from the following: cha-cha, rumba, mambo, merengue, salsa, samba, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 151 Ballroom Bronze I Workshop
Prerequisite: None
Introduction to the study of ballroom including partnership technique, dance posture, basic patterns, and music for traditional ballroom dances including waltz, foxtrot, cha-cha, rumba, and swing. Enrollment with a partner is strongly suggested. (F, Sp, Su)

PFDA 152 Latin Ballroom II
Prerequisite: None
Recommended: PFDA 147
This course is designed to build on the techniques introduced in Latin Ballroom I. Ballroom Swing II, or Ballroom Topics. Emphasis will be placed on the following dance styles: cha-cha, rumba, mambo, samba, salsa, merengue, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFFT 100 Total Fitness A
Prerequisite: None
Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 101 Total Fitness B
Prerequisite: None
Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 102 Total Fitness C
Prerequisite: None
Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 103 Total Fitness D
Prerequisite: None
Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 107 Jogging: Beginning
Prerequisite: None
This course introduces jogging as a fitness modality and covers how to care for feet, proper equipment choices, clothing, and safety. (F, Sp, Su)

PFFT 111 Aerobic Boxing
Prerequisite: None
This course will teach the art of self-defense while improving your aerobic and anaerobic capacity. (F, Sp, Su)

PFFT 112 Body Flexibility
Prerequisite: None
This course is designed to increase body flexibility by learning proper stretching techniques and applying these techniques to range of motion and muscle flexibility. (F, Sp, Su)

PFFT 113 Tonic and Stretch
Prerequisite: None
This course combines calisthenics and stretching. Students will use floor exercises to tone muscles and increase flexibility. Proper stretching techniques will be emphasized. Students will examine which muscle groups are being worked. (F, Sp, Su)

PFFT 114 Advanced Circuit Training
Prerequisite: None
This course is designed to incorporate strength conditioning, muscle endurance, flexibility, and cardiovascular training for a total body workout. This can be accomplished in a relatively short time frame by utilizing the circuit training method. (F, Sp, Su)

PFFT 115 Emergency Services Fitness I
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
This course provides emergency service students with techniques and practice to maintain and improve the high degree of physical fitness necessary to meet the demands of their profession. (F, Sp, Su)

PFFT 116 Emergency Services Fitness II
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
This course provides emergency service students with progressive enhancement of techniques and practice of physical fitness to meet professional demands. (F, Sp, Su)

PFFT 117 Emergency Services Fitness III
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
This course provides emergency service students with fitness and strength-building techniques to continue to meet the demands of their profession. (F, Sp, Su)

PFFT 118 Emergency Services Fitness IV
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
This course provides emergency service students with fitness and strength-building techniques to continue to meet the demands of their profession. (F, Sp, Su)

PFFT 120 Aerobic Exercise
Prerequisite: None
This course helps students to improve cardiovascular function and oxygen efficiency to enhance muscle structure and function through toning exercises, aerobic dancing, and stretching. (F, Sp, Su)

PFFT 122 Step Aerobics
Prerequisite: None
This course helps students improve cardiovascular efficiency through the use of step platforms. Movement combinations with increasing complexity will be used to increase student's balance and coordination. Toning and stretching exercises will be used to complete muscle balancing and flexibility. Educational material will be distributed to increase student's knowledge of fitness and wellness to improve personal quality of life. (F, Sp, Su)

PFFT 136 Dance Exercise
Prerequisite: None
This course includes warm-up and exercise from various dance genres including ballet, modern, and jazz designed to develop flexibility, strength, and coordination. Emphasis is placed on toning and stretching. Some sections teach NIA (Neuromuscular Integrative Action) and incorporate other dance forms with yoga and martial arts. (F, Sp, Su)

PFFT 147 Basketball Fitness Training
Prerequisite: None
This course is not a traditional basketball class. Participants will be in a workout class that will have an emphasis on conditioning using basketball drills and basketball. Class activities will include running, continuous movement, shooting, defensive slides, and dribbling. (F, Sp, Su)

PFFT 151 Cardiac Rehab Exercise
Prerequisite: Department Approval
The continuing course includes medically-monitored exercise and education, which emphasizes reducing the risk factors known to contribute to heart disease. Methods and level of exercise are determined by the participant's physician and the program medical director. Monitored by professional staff. (F, Sp, Su)

PFFT 160 Fit for Life Exercise
Prerequisite: None
This course introduces the older student to the benefits and importance of a regular exercise program to combat the debilitating effects which inactivity has upon aging. The student will learn the benefits of cardiovascular exercise as well as flexibility, mobility, and range of motion. (F, Sp, Su)
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**Notes:**
- Courses are numbered sequentially from PFFT 170 to PFWN 210.
- Credits for each course are indicated in parentheses after the course code.
- Prerequisites are noted where applicable, indicating the need for prior knowledge or completion of specific courses.
- Courses are offered at different levels, with indications like "Recommended" for further study.
- Special subjects and topics are highlighted with unique course numbers and titles.
- Links to websites are provided for additional resources and information.
PFKN 250  Measurements in Kinesiology 3
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 3
Recommended: PFKN 170
This is an introductory course which examines materials and methods used for assessment and analysis within Kinesiology. Emphasis will be placed on procedures and tools used within the various sub-disciplines. Measurement and evaluation methods will address motor skills, physical fitness, and psychological components associated with physical fitness. (F, Sp)

PFKN 260  Growth and Motor Behavior 3
Prerequisite: Reading Level 5 and Writing Level 6
This is a fundamental course which investigates the relationship between biological maturation and physical growth as it relates to motor performance and motor skills learning. The course will also cover fundamentals of motor learning, stages of skill acquisition, physical fitness, and motor abilities of children and youth. (F, Sp)

PFKN 285  Ind Study in Physical Fitness 5-4
Prerequisite: None
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

PFSP 100  Aikido 1
Prerequisite: None
This course is an introduction to the philosophy of Aikido. Basic movements of Aikido as a martial art are introduced. (F, Sp)

PFSP 101  Angling: Beginning 1
Prerequisite: None
This course introduces the student to angling with demonstrations of basic angling tackle and techniques. Information is provided on Michigan sport fish and their habitat. Fishing trips are taken for steelhead, walleye, salmon, trout, bass, and other game fish. Students are introduced to the excitement, satisfaction and mystique of fishing. (F, Sp)

PFSP 102  Basketball: Beginning 1
Prerequisite: None
This course introduces the student to the fundamental skills of basketball. Course emphasis is placed on ball handling, passing, shooting, and rules. (F, Sp)

PFSP 103  Basketball: Advanced 1
Prerequisite: None
Recommended: PFSP 102 (previously FPTS 108)
This course is designed for the student who has a sound understanding of basketball skills. Drills will be used to enhance passing and shooting skill development. Emphasis is placed on team play as well as individual skill improvement. (F, Sp)

PFSP 104  Bicycling Camping/Touring 1
Prerequisite: None
This course is a 2 1/2 day bicycle trip in a scenic area of Michigan. The class will include two nights of camping and two days of bike riding 35-45 miles each day. Base camp will be set up or a soft wagon will be used. Carrying your own gear will be optional. (F, Sp, Su)

PFSP 105  Bowling: Beginning 1
Prerequisite: None
This course is a basic introduction to bowling. Primary emphasis is placed on spot bowling, release, and approach. Students become familiar with bowling etiquette and scoring. (F, Sp, Su)

PFSP 106  Bowling: Advanced 1
Prerequisite: None
Recommended: PFSP 105 (previously PFIS 100)
This course is an extensive review of skills introduced at the beginning and intermediate levels. Students develop strategies in lane reading. (F, Sp, Su)

PFSP 107  Fencing: Beginning 1
Prerequisite: None
This course is designed to introduce the student to basic skills and theories in fell fencing. Course emphasis is placed on basic skills such as advance, retreat, lunges, disengages, coupes, one-two double, riposte, counter parry and riposte, and advance-advance. Group instruction is used. (F, Sp)

PFSP 108  Fencing: Intermediate 1
Prerequisite: PFSP 107 2.0 minimum (previously PFOW 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)

PFSP 109  Golf: Beginning 1
Prerequisite: None
This course is an introduction to the basics of golf which include equipment, grip, stance and posture, club swing, and the rules and etiquette of golf. (F, Sp, Su)

PFSP 110  Golf: Intermediate 1
Prerequisite: None
Recommended: PFSP 109 (previously PFIS 103)
This course will review the basics of golf equipment, grip, stance and posture, and club swing. Students will be given drills to foster and improve proper swing mechanics for course play. (F, Sp, Su)

PFSP 111  Indoor Soccer 1
Prerequisite: None
This course is designed to introduce students to the basics of indoor soccer. Passing and shooting drills are emphasized along with team play. Modifications to soccer rules are used to accommodate indoor soccer rules. (F, Sp, Su)

PFSP 112  Judo: Beginning 1
Prerequisite: None
This course is designed to familiarize students with basic Judo techniques of throwing, winding, and grappling. (F, Sp, Su)

PFSP 113  Judo: Intermediate 1
Prerequisite: None
Recommended: PFSP 112 (previously PFOW 103)
This course works toward a series of sequential Judo movements with continued emphasis on throwing and grappling. (F, Sp)

PFSP 114  Karate: Beginning 1
Prerequisite: None
This course introduces the basic skills of karate: kicking with the foot and knees, and punching with the fist and hands. (F, Sp, Su)

PFSP 115  Karate: Intermediate 1
Prerequisite: None
Recommended: PFSP 114 (previously PFOW 105)
This course further develops karate skills in punching with the fists and hands, kicking with feet and knees, and essential body movement in combative activities with an emphasis on free sparring. (F, Sp, Su)

PFSP 116  Karate: Advanced 1
Prerequisite: None
Recommended: PFSP 114 (previously PFOW 105) or PFSP 115 (previously PFOW 100)
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)

PFSP 117  Pool: Beginning 1
Prerequisite: None
This course introduces students to the fundamentals of pool (pocket billiards). Primary course emphasis is on stance, grip, bridge, aim, and stroke. Cue ball position shots such as stop, follow, draw, and center are covered. (F, Sp)

PFSP 118  Pool: Intermediate 1
Prerequisite: None
Recommended: PFSP 117 (previously PFIS 108)
This course reviews the fundamentals of stance, grip, bridge, aim, and stroke. Skill improvement and concentration techniques are stressed. (F, Sp)

PFSP 119  Table Tennis: Beginning 1
Prerequisite: None
This course is an introduction to table tennis as played by tournament players. Rules 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PFSP 120</td>
<td>Table Tennis: Intermediate</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Recommended: PFSP 119 (formerly PFIS 111)</td>
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<tr>
<td></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>
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<tr>
<td>PFSP 121</td>
<td>Competitive Table Tennis</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: None</td>
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<tr>
<td></td>
<td>Recommended: PFSP 119 (formerly PFIS 111)</td>
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<td></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>
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<tr>
<td>PFSP 122</td>
<td>Tai Chi I</td>
<td>1</td>
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<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>This course introduces the first 30 forms of the Yang-style Tai Chi. Students develop techniques to focus on relaxation and inner calmness. (F, Sp)</td>
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<tr>
<td>PFSP 123</td>
<td>Tai Chi II</td>
<td>1</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>Recommended: PFSP 122 (formerly PFIS 122)</td>
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<td></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)</td>
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<tr>
<td>PFSP 124</td>
<td>Tennis: Beginning</td>
<td>1</td>
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<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>This course will introduce the student to the following skills: ground strokes, serve, volley, lob, and overhead serving as well as doubles and singles strategy. (F, Sp)</td>
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<tr>
<td>PFSP 125</td>
<td>Tennis: Intermediate</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>Recommended: PFSP 124 (formerly PFIS 115)</td>
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<td></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)</td>
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<tr>
<td>PFSP 126</td>
<td>Volleyball: Beginning</td>
<td>1</td>
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<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>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)</td>
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<tr>
<td>PFSP 127</td>
<td>Competitive Volleyball</td>
<td>1</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>Recommended: PFSP 126 (formerly PFIS 108)</td>
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<td></td>
<td>This course provides the student with a conceptual framework for advanced offensive and defensive systems of volleyball. Individuals work on skill drills and intraclass competition. (F, Sp)</td>
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<tr>
<td>PFWT 124</td>
<td>Weight Training II</td>
<td>2</td>
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<tr>
<td></td>
<td>Prerequisite: None</td>
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<td></td>
<td>Recommended: PFWT 112 (previously PFWT 109) or PFWT 123 (previously PFWT 108)</td>
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<td>This course expands students' knowledge of progressive resistance (weight) training, (using both free weights and machines), thus increasing the variety and methods of training techniques. Students will monitor their food intake throughout the semester, further developing an understanding of the impact of appropriate dietary habits on resistance training. (F, Sp, Su)</td>
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<tr>
<td>PHIL 151</td>
<td>Intro: Logic &amp; Critical Think</td>
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<td>Prerequisite: Reading Level 5</td>
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<td>Introduction to modern logic and elements of reasoning, with special attention given to the roles of language in reasoning, distinguishing deductive from inductive arguments, recognizing levels of meaning and differing world views (Weltanschauungen), analyzing truth-functional relations, avoiding fallacious reasoning or misleading language, and using logical skills in everyday life. (F, Sp, Su)</td>
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<tr>
<td>PHIL 152</td>
<td>Introduction to Ethics</td>
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<td>Prerequisite: Reading Level 5</td>
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<td>Designed to explore essential requirements for moral reasoning and to call attention to both the factual foundation as well as the traditional criteria utilized for value judgments. Major ethical theories will be discussed, along with their applications to everyday situations. The course will include cross-cultural references, when appropriate. (F, Sp, Su)</td>
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<tr>
<td>PHIL 153</td>
<td>Knowledge and Reality</td>
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<td>Prerequisite: Reading Level 5</td>
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<td>Selected issues from classical and contemporary philosophy provide an introduction to differences between knowledge and opinion, ways of supporting knowledge claims, and the relationship between the knower and what exists. (F)</td>
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<tr>
<td>PHIL 211</td>
<td>World Philosophies I</td>
<td>4</td>
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<td></td>
<td>Prerequisite: Reading Level 5 and Writing Level 6</td>
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<td>Surveys major developments in theories of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers Chinese, Indian, Greek, Roman, Christian, Islamic, and European thought from mythic beginnings to the period of early scientific reasoning. (F, Sp)</td>
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<tr>
<td>PHIL 212</td>
<td>World Philosophies II</td>
<td>4</td>
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<tr>
<td></td>
<td>Prerequisite: Reading Level 5 and Writing Level 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Surveys major developments in theories of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers European, Asian, African, Native American, and American pragmatic thought from the scientific revolution to contemporary global concerns. (Sp)</td>
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<tr>
<td>PHIL 260</td>
<td>Contemporary Ethical Problems</td>
<td>4</td>
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<td></td>
<td>Prerequisite: Reading Level 5 and Writing Level 6</td>
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<td>This is an extended course designed to examine contemporary moral issues which arise through technological and social developments. It will explore the limits of traditional ethical theories and/or their possible adaptation to a changing world. Where appropriate, course includes issues of cross-cultural importance, which involve multinational concerns. (Sp)</td>
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<tr>
<td>PHIL 295</td>
<td>Indep. Study in Philosophy</td>
<td>1-4</td>
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<td>Prerequisite: Department Approval</td>
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<td>An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)</td>
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<tr>
<td>PHON 108</td>
<td>Introduction to Phonics</td>
<td>4</td>
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<td>Prerequisite: Reading Level 1 and Writing Level 1</td>
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<td>Explores the 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)</td>
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</tr>
</tbody>
</table>
PHYS 120 - The Art of Physics
Pre-requisite: Reading Level 3 and Writing Level 6 and Math Level 4
This course explores the wonders of the physical universe by giving students a basic understanding of motion, forces, energies, and optics. Designated for students in the Humanities, Art, Design & Multimedia, or other non-science majors. Extensive hands-on activities and laboratory exercises supplement the lecture. (F, Sp)

PHYS 200 - Applied Physics
Pre-requisite: Math Level 4
The basic principles of force, work, rate, resistance, energy, and power are applied to four systems: mechanical (linear and rotational), fluid (liquid and gases), electrical and thermal systems. They are developed by utilizing unifying concepts through mathematical expressions. Designed for vocational programs including chemical processing, industrial technology, and machine maintenance. (F, Sp)

PHYS 221 - Introductory Physics I
Pre-requisite: Reading Level 5 and Writing Level 6 and Math Level 3
First semester of algebra-based physics with laboratory. Presents the fundamental principles of physics, with applications. Topics in mechanics include one and two dimensional kinematics, forces, energy, and work. (F, Sp)

PHYS 222 - Introductory Physics II
Pre-requisite: PHYS 221 2.0 minimum or PHYS 221 2.0 minimum and PHYS 225 2.0 minimum
Second semester continuation of algebra-based physics with laboratory. Present fundamental principles of physics, with applications. Topics include electricity and magnetism, simple harmonic motion, waves, sound, light, geometric and physical optics. Experiments and hands-on activities complement the lecture topics. (F, Sp)

PHYS 251 - Physics I: Mechanics
Pre-requisite: MATH 152 2.0 minimum or Concurrently Reading Level 5 and Writing Level 6
First in a two-semester sequence of calculus-based physics with laboratory for science and engineering students. Topics include forces and motion, momentum, work and energy, conservation laws of energy and momentum, rotational motion, static equilibrium, gravitation, oscillations. May include relativity, nuclear physics, thermodynamics. Experiments and hands-on activities complement lecture topics. (F, Sp)

PHYS 252 - Physics II: Electrom/Elastic
Pre-requisite: PHYS 251 2.0 minimum or PHYS 251 2.0 minimum and PHYS 225 2.0 minimum and MATH 152 2.0 minimum
Second in a two-semester sequence of calculus-based physics with laboratory for science and engineering students. Topics include electric and magnetic forces and fields, electromagnetic energy, currents and circuits, electromagnetic oscillations and waves, magnetic waves and sound, light waves, physical and geometrical optics. Experiments and hands-on activities complement lecture topics. (F, Sp)

POLS 205 - Government Internship
Pre-requisite: None
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making, and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and townships through the federal level. (F, Sp)

POLS 206 - Advanced Government Internship
Pre-requisite: None
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making, and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and townships through the federal level. (F, Sp)

POLS 240 - Introduction to Public Policy
Pre-requisite: Reading Level 5
This course will provide an analysis of political and organizational processes which influence the formulation and implementation of public policy. Special attention will be given to the formulation, implementation, and evaluation of various selected public policies. Further, the course is intended to develop some skills for the evaluation and design of policies. (Sp)

POLS 250 - US Political Parties/Elections
Pre-requisite: Reading Level 5 and Writing Level 5
Emphasizes origins, structure, and functions of US political parties. Examines the election process and factors influencing election results. Emphasis is placed on the importance of organizing effective political action and citizen participation, and the role of interest groups in American politics. (F)

POLS 260 - Comparative Political Systems
Pre-requisite: Reading Level 5 and Writing Level 5
An introduction to the institutions, processes, and policies of political systems throughout the world. The course will compare political cultures and behavior in the United States, the Industrial nations of Europe and Asia, and the developing nations, with special emphasis on the themes of democracy, participation, and political change. (F, Sp)

POLS 270 - International Relations
Pre-requisite: Reading Level 5 and Writing Level 5
A course in contemporary international relations, with emphasis on politics, concepts, theories, and rudimentary methods of analyzing. The relationship between international politics and U.S. foreign and domestic policy is explored. (Sp)

POLS 295 - Ind Study in Political Science
Pre-requisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp)

PSYC - Psychology

PSYC 175 - Psych of Death/Prep for Living
Pre-requisite: Reading Level 5
Introduces psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include cross-cultural and historical perspectives, health care systems, medical ethics, grief/loss issues, funerals and body disposition, legal and social issues, death in modern society, suicide, and beliefs about life after death. (Sp)

PSYC 200 - Introduction to Psychology
Pre-requisite: Reading Level 5
The basic orientation to the field of psychology, designed as a general survey and as preparation for advanced courses in the field. Topics include methods, nervous systems, intelligence, development, learning, memory, personality, abnormality, therapy, and social behavior. (F, Sp)

PSYC 202 - Psychology of Personality
Pre-requisite: PSYC 200 2.0 minimum and Reading Level 5 and Writing Level 6
A survey of the leading theories of personality and personality development. Topics include Freudian/psychodynamic, trait, behavioral, humanistic, and Yoga/Buddhist theories, assessment of personality, and major personality theorists. (F, Sp)
QUAL 103 Probability/Statl Qual Assur
Prerequisite: None
This course introduces the student to basic probability and statistics as related to quality assurance. Material covered includes probability concepts, average and standard deviation, discrete probability distributions, the normal distribution, the Central Limit Theorem, OC curves and basic acceptance sampling concepts. Computer applications are included. (F, Sp)

QUAL 203 Quality Systems Management
Prerequisite: None
Recommended: QUAL 100 or Work Experience in Quality
This course focuses on developing, managing and implementing quality assurance systems. Course material and assignments are designed to develop student skills in intracompany and customer quality relationships including quality planning, quality manual, procedures and job instruction development, communication, work load and preparation for quality certification programs and continuous improvement. (Sp)

QUAL 251 Current Qual Assr Topics
Prerequisite: QUAL 100 1.0 minimum
A study of specific topics affecting quality assurance practices. This course is designed to expose students to the latest theories and practices in the areas of customer requirements, problem solving, quality management, measurement and statistics. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp, Su)

QUAL 252 Current QA Topics II
Prerequisite: QUAL 100 1.0 minimum
A study of specific topics affecting quality assurance practices. This course is designed to expose students to the latest theories and practices in the areas of customer requirements, problem solving, quality management, measurement and statistics. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp, Su)

RDGR 101 Personal Reading I
Prerequisite: Reading Level 1 and Writing Level 1
One-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

RDGR 102 Personal Reading II
Prerequisite: Reading Level 1 and Writing Level 1
Two-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

RDGR 103 Personal Reading III
Prerequisite: Reading Level 1 and Writing Level 1
Three-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

READ 100 Reading Laboratory
Prerequisite: Reading Level 1 and Writing Level 1
Designed to teach fundamental reading skills through small group/individualized instruction. Intended for students whose reading skills lie within the READ Level 1 literacy range as indicated by the College Placement Test. (F, Sp, Su)

READ 108 Individualized Reading
Prerequisite: Reading Level 3 and Writing Level 2
Designed for average readers, especially adults in the working community, who wish to improve their reading proficiency with one-on-one/small group instruction and directed practice. Students concentrate on areas that need strengthening. (May repeat for credit three times.) (F, Sp, Su)

READ 111 Reading: Essential Strategies
Prerequisite: Reading Level 2 and Writing Level 2
Designed to provide a transition from mastery of basic reading skills and individualized tutorial literacy instruction to a mainstream, classroom learning experience. Includes emphasis in reading for main ideas, vocabulary development, improving comprehension, drawing conclusions from implied meaning, and application of techniques to improve academic survival. (F, Sp, Su)
READ 114 Reading Skills
Prerequisite: Reading Level 3 and Writing Level 2
Designed to increase basic comprehension skills, build vocabulary, and prepare students for college-level reading through the exploration of effective study techniques. (F, Sp, Su) 4

READ 116 Reading Comprehension
Prerequisite: Reading Level 3 and Writing Level 4
Designed to extend beyond reading comprehension at the literal level, develop inferential ability and recognition of structure and expository patterns in reading and increase reading rates for greater reading efficiency. Additionally, attention is given to vocabulary improvement, multiple purposes of reading, importance of flexibility in reading, and increased concentration. (F, Sp, Su) 4

READ 165 Critical Reading
Prerequisite: Reading Level 5 and Writing Level 4
This course is designed to go beyond reading comprehension at the literal level and to develop in the individual the ability to grasp implied meanings and draw conclusions. The reader must also be able to perceive the structural and developmental pattern in written material and to judge rationally what he or she reads. (F, Sp, Su) 2

READ 175 Speed Reading - Adv Vocabulary
Prerequisite: Reading Level 5 and Writing Level 4
Designed for the student of an average or better-than-average reading ability. Increases reading rate and comprehension for greater efficiency in studying in general reading. Special attention is given to vocabulary improvement, the multiple purposes of reading, the importance of flexibility in reading, and increased concentration. (F, Sp, Su) 2

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REAL - Real Estate

REAL 271 Introduction to Real Estate
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) 2

REAL 273 Real Estate Investment
Prerequisite: None
Recommended: REAL 271 or REAL 274
The emphasis of this course is on investment analysis, financing, depreciation, capital gains, exchanging, and federal tax implications of real estate acquisitions, ownership, and disposal. (F) 3

REAL 274 Real Estate License Exam
Prerequisite: None
Intensive study in the fundamentals of real estate. Preparation for the State of Michigan License Examination, administered by the Applied Measurement Professionals (AMP). This course meets statutory requirements including four hours in fair housing. (F, Sp, Su) 3

REAL 275 Real Estate Financing
Prerequisite: None
This course covers the significance and nature of mortgage lending, mortgage money markets, sources, types of mortgages, instruments, qualifying, the land contract and its use, administration of a mortgage loan, and a loan portfolio and methods of foreclosure. (F, Sp) 3

REAL 277 Property Management
Prerequisite: None
Covers management and the market, marketing residential and commercial rental space, creating an organized management plan, tenant and landlord laws, rent collection, leasing, tenant screening, fair-housing requirements, tenant-tenant relations, accounting for investment properties, real estate as an investment, managing apartments, office space, retail stores, and special purpose buildings. (F, Sp) 3

REAL 279 Residential Appraisal
Prerequisite: None
This is a survey course on the appraisal of the single family residence. It is designed to expose the student to the basic economic, political, social, and environmental foundations upon which real estate valuation rests. The student will then encounter the processes by which freestanding, single family dwellings are valued. Students will also be acquainted with professional standards and ethics. (F) 3

REAL 280 Real Estate Law
Prerequisite: None
Recommended: REAL 271 or REAL 274
Topics covered in this course include: land and its elements, land titles, land interests, abstracts and title insurance, deeds, encumbrances, liens, mortgages, land contracts, foreclosures and landlord-tenant relations, private land-use controls including restrictions, covenants, and zoning laws pertaining to real estate. (Sp) 3

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RELIGION

RELIG 211 World Religions I
Prerequisite: Reading Level 5 and Writing Level 6
This course describes and analyzes the beliefs and practices of Hinduism, Judaism, Buddhism, Sikhism, Confucianism, and Taoism in cultural context, from their origins to the present. It examines their influence on literature and the arts, beliefs and values, socioeconomic and political systems, and science and technology in world civilizations. (F) 4

RELIG 212 World Religions II
Prerequisite: Reading Level 5 and Writing Level 6
This course describes and analyzes the beliefs and practices of Judaism, Christianity, Islam, and other Western religions in cultural context, from their origins to the present. It examines their influence on literature and the arts, beliefs and values, socioeconomic and political systems, and science and technology in world civilizations. (Sp) 4

RELIG 241 Old Testament Literature
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
This course surveys the content of Judaism's Bible (Christianity's Old Testament) in its original Hebrew cultural/religious context, using insights of modern critical scholarship. Origins and early development of Hebrew religious beliefs and practices are examined. (F) 4

RELIG 242 New Testament Literature
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: WRIT 121 or WRIT 131
This course surveys the content of Christianity's New Testament in its original Hebrew and Greco-Roman context, using insights of modern critical scholarship. Origins and early development of Christianity and its religious beliefs and practices are examined. (Sp) 4

RELIG 250 Religions of East Asia
Prerequisite: Reading Level 5 and Writing Level 6
This course surveys the origins and development of East Asian religions. The religious beliefs and practices of Confucianism, Taoism, Buddhism (Mahayana and Tibetans), and Shinto are examined in terms of their vital role in the development of ancient and modern East Asian civilizations. (Sp) 4

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SCIENCE

SCIENCE TECHNOLOGY INTERNSHIP

SCIENCE 287 Science Technology Internship
Prerequisite: CHEM 151 2.0 minimum and CHEM 161 2.0 minimum and Department Approval
This course provides on-the-job training for an applied degree in science technology. Placement is made at an approved training site to earn credits for satisfactory work performance. This internship may be a paid or unpaid work experience. Students will apply knowledge and skills learned in academic courses to real-world situations. (F, Sp, Su) 4

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SCIENCE SEMINARS

SCIENCE 286 Directed Histotech Studies
Prerequisite: Reading Level 3 and Writing Level 4 and Math Level 4
Restriction: Histologic Technician Certificate of Completion
Recommended: High School Chemistry and Biology
This course gives students the opportunity to learn laboratory skills in Histotechnology. Histotechnology is the preparation of tissue specimens for microscopic evaluation. Students are challenged to analyze/evaluate their skills in safety, tissue processing, embedding, microscopy, special staining, quality assurance, problem solving, and technical writing. (F, Sp, Su) 4
SDEV 103 Preventing Parent Burnout

Prerequisite: None

This course is designed to facilitate an understanding of parent burnout and its impact on mental and physical functions. The class will address causes, symptoms, family relationship dynamics, and problem solving. The course will provide multiple skills and mechanisms to cope with stress and prevent parent burnout. (F, Sp, Su)

SDEV 118 Stretching Your Dollars

Prerequisite: None

Assistance is given in basic money management, budgeting, 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 workplace will also be addressed. (F, Sp, Su)

SDEV 121 Exploring Your Potential

Prerequisite: None

This course is designed to help each person identify past and present achievements which suggest the presence of strengths and potential. The goal of this class is greater realization of one's potential through self-determination. (F, Sp, Su)

SDEV 123 Career Bridge

Prerequisite: None

Career Bridge enhances a smooth transition to college course work by helping the student identify a career direction, learn techniques of study, and build confidence in the pursuit of his or her educational goal. Positive behavioral choices will also be taught, including time management, the elimination of self-defeating behaviors, and increased self-esteem. (F, Sp, Su)

SDEV 124 Techniques of Study

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

Prerequisite: None

Students learn a career planning process by identifying their interests, values, and skills through a variety of self-assessment exercises. Students will utilize available resources to research career options and participate in classroom discussions on topics relating to career decision-making. (F, Sp, Su)

SDEV 126 Self-Defeating Behavior

Prerequisite: None

The goal of this course is to learn how self-defeating behaviors begin and are maintained, and how they can be eliminated. Behavior change is aimed at teaching people how to live life more fully and happily by identifying and cultivating life-giving behaviors. (F, Sp, Su)

SDEV 130 Job Search Skills

Prerequisite: None

Skills and techniques in the job search process are taught. Course content covers filling out applications, writing resumes and cover letters, interviews, and other topics. Students seek employment. Group discussions focus upon personal attitudes toward job hunting. (F, Sp, Su)

SDEV 135 Tools for College Success

Prerequisite: None

This course provides an introduction to the college experience and to skills that students need to be successful. Topics covered include academic and self-management issues that affect student performance, such as goal-setting, study skills, time management, communication, relationships, career planning, problem-solving, financial health, and study. (F, Sp, Su)
SIGN 150 Orientation to Deafness
Prerequisite: Reading Level 5
This course is designed to introduce the student to pathological and cultural perspectives on deafness and the implications those perspectives have for persons who are deaf. Elements of the communications process, serial verbal communication, group dynamics, research and oral presentation skills will also be covered via lectures, readings and group discussions. (F, Sp, Su)

SIGN 161 American Sign Language I
Prerequisite: None
Recommended: SIGN 160 2.0 minimum or Concurrently
This course provides basic knowledge of American Sign Language vocabulary and grammar. Pantomime is also used to explore nonverbal communication and its function within ASL: Elements of the communication process, ASL presentation skills, and group dynamics will also be covered. Designed for students intending to become sign language interpreters. (F, Sp, Su)

SIGN 162 American Sign Language II
Prerequisite: None
Recommended: SIGN 161 2.0 minimum
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. Intended for students who plan to become sign language interpreters. (F, Sp, Su)

SIGN 163 American Sign Language III
Prerequisite: None
Recommended: SIGN 162 2.0 minimum
Designed to provide additional vocabulary and synthesis of grammatical elements of American Sign Language through expressive and receptive use of conversational sign language intended for students who plan to become sign language interpreters. (F, Sp, Su)

SIGN 164 American Sign Language IV
Prerequisite: SIGN 163 2.0 minimum
This course is intended to build conceptual understanding and use of American Sign Language. Students will develop American Sign Language skills by interpreting in ASL paragraphs which are presented in English context. Designed for students intending to become sign language interpreters. (F)

SIGN 165 Fingerspelling
Prerequisite: SIGN 161 2.0 minimum
Recommended: SIGN 162 2.0 minimum or Concurrently
This course provides the student with concentrated instruction and practice in both expressive and receptive fingerspelling skills. Designed for students intending to become sign language interpreters. (F, Sp, Su)

SIGN 167 Beginning Sign to Voice
Prerequisite: None
Recommended: SIGN 162 2.0 minimum
Designed to increase the student's receptive skills in conversational sign language language 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. Intended for students who plan to become sign language interpreters. (F, Sp, Su)

SIGN 168 Expressive Manual Commun
Prerequisite: SIGN 162 2.0 minimum
This course focuses on synthesizing grammatical elements of American Sign Language and using them in an expressive mode. It creates awareness of conversational behaviors used by the deaf community and provides practice of those behaviors in classroom and other settings. Designed for students intending to become sign language interpreters. (Su)

SIGN 169 Receptive Communication
Prerequisite: SIGN 163 2.0 minimum or Concurrently and SIGN 167 2.0 minimum or Concurrently
This course enhances the students receptive and voice skills, specifically skills needed to pass the Interpreter Training Program Screening Assessment (ITP Test), such as ASL vocabulary recognition, English sentence structure, and vocal tone and volume. Topics will be covered using videos, lectures, guest signers, and in-class activities. (Su)

SIGN 176 Advanced Fingerspelling
Prerequisite: SIGN 162 2.0 minimum
This course provides the student with advanced concentrated instruction and practice in both expressive and receptive fingerspelling skills. Designed for students intending to become sign language interpreters. (F, Sp, Su)

SIGN 240 Interpreting/Transliterating
Prerequisite: Successful ITP Screening
American Sign Language vocabulary will continue to be developed while learning about the interpreting process. Students will analyze text and demonstrate the ability to facilitate communication in both ASL sentence structure or English word order. Course is designed for students intending to become sign language interpreters. (F)

SIGN 250 Deaf Culture and History
Prerequisite: SIGN 153 2.5 minimum
This course looks closely at the unique experiences of those in the deaf community. It examines the history of the deaf community in America and the sociology of the hearing-impaired (both deaf and the hard-of-hearing). Designed for students intending to become sign language interpreters. (Sp)

SIGN 260 Linguistic Principles of ASL
Prerequisite: SIGN 163 2.0 minimum
An overview of the linguistic organization of ASL, including a linguistic perspective on how ASL is learned and how it is (and is not) influenced by English. Topics relevant to interpreting, such as language variation and translation, will be emphasized. Designed for students intending to become sign language interpreters. (F)

SIGN 261 Principles of Interpreting
Prerequisite: Successful ITP Screening
Surveys professional interpreting through lecture, role-playing, and classroom discussion. Introduces the ethics of interpreting and roles and responsibilities of the professional interpreter. Examines necessary skills of the interpreter in various settings: educational, mental health, vocational rehabilitation, legal, religious, phone, television, medical, deaf, blind, and minimal language skills. (F)

SIGN 262 Mock Quality Assurance (QA)
Prerequisite: SIGN 261 2.5 minimum
The course provides students with simulated testing interpreter/transliterating settings using interactive videotapes of hearing and deaf individuals with the purpose of developing skills necessary for interpreter evaluation. Designed for students intending to become sign language interpreters. (Su)

SIGN 263 Intermediate Sign to Voice
Prerequisite: SIGN 240 2.5 minimum and SIGN 261 2.5 minimum
This course develops and refines necessary basic skills and fluency in receptive sign language and for voicing all levels of communication of deaf individuals. Techniques taught include interpreter task analysis, listening, attending, internal message formulation, vocabulary search, and monitoring output. Designed for students intending to become sign language interpreters. (Sp)

SIGN 264 Advanced Sign to Voice
Prerequisite: SIGN 263 2.5 minimum
This course provides advanced skill development and fluency in voicing for all communication levels of deaf persons. Techniques taught are voice projection, breathing and relaxation, analysis of sign information, anticipation and prediction, closure, modality switching, correction, image search, decalage, and pacing. Designed for students intending to become sign language interpreters. (Sp)
SIGN 265  Adv Interpreting/Transliterat 3
Prerequisite: SIGN 282 2.5 minimum
This course continues the development of skills necessary for interpreter evaluation. Students will be provided with simulated interpreting situations using interactive videotapes of hearing/deaf individuals requiring students to interpret/translate. Designed for students intending to become sign language interpreters. (F)

SIGN 277  Sign Internship I 3
Prerequisite: SIGN 261 2.5 minimum
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend an additional 6 hours a week in their placement setting. Designed for students intending to become sign language interpreters. (Sp)

SIGN 268  Sign Internship II 3
Prerequisite: SIGN 267 2.5 minimum
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend an additional 6 hours a week in their placement setting. Designed for students intending to become sign language interpreters. (Sp)

SIGN 294  Sign Lang Interpreting Seminar 2
Prerequisite: SIGN 202 2.5 minimum
Special topics for intermediate and advanced interpreters. Topics cover a broad range of subjects related to the interpreting field and include preparation for state and national exams. (F, Sp, Su)

SIGN 295  Indep. Study in Sign Language 1-3
Prerequisite: Department Approval
Recommended: SIGN 261 2.0 minimum
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. Restricted to students intending to become sign language interpreters. (F, Sp, Su)

SOCOL - Sociology

SOCOL 120  Introduction to Sociology 4
Prerequisite: Reading Level 5
A survey of major theoretical perspectives, concepts, and methods of sociology. Emphasis is given to societal origins, social organization, culture, cultural diversity: socialization; stratification; social institutions, and social change within a global context. (F, Sp, Su)

SOCOL 190  Introduction to Latino Studies 3
Prerequisite: Reading Level 5
A survey of social forces that have shaped the experience of Latinos in the U.S. An exploration of Latino relations with non-Latino groups and social institutions using a structural framework which considers race, class and gender. Emphasis is placed on the diversity of the Latino community and current social trends. (F)

SOCOL 195  Intro to African-American Stud 3
Prerequisite: Reading Level 5
A survey of culture and social structure of people of African descent and their role in the making of the U.S. society. Theories and concepts pertinent to understanding the development and dynamics of contemporary African-American experience will be explored. Topics include slavery, multiculturalism, civil rights movement and affirmative action. (Sp)

SOCOL 254  Marriage and Family 3
Prerequisite: (SOCOL 120 1.0 minimum or PSYC 200 1.0 minimum) and Reading Level 5
Survey of theoretical perspectives on the institutions of marriage and family. Topics include sex, gender, gender roles, sexual behavior, values, psychological needs, divorce, parenting and family problems. Variations in family types and literature among diverse groups within the U.S. and elsewhere will be examined within the context of social change. (F, Sp)

SOCOL 265  Contemporary Social Problems 3
Prerequisite: (SOCOL 120 1.0 minimum and Reading Level 5
This course is a theoretical and empirical survey of the nature and causes of social problems such as poverty, crime, racial and gender inequality, demographic and environmental changes, health care, education and family stability are examined. Examples from other societies will be used for comparative analysis and establishing global links. (F, Sp, Su)

SOCOL 260  Race and Ethnicity 3
Prerequisite: SOCOL 120 1.0 minimum and Reading Level 5
An introduction to the culture and contemporary lifestyles of minority groups throughout the world. Emphasis is placed on sociological and anthropological concepts and theories with respect to selected minorities. Included are ethnic and racial groups in the U.S. and other societies found in Africa, Asia, Europe, Latin America, and North America. (F, Sp)

SOCOL 265  Independent Study in Sociology 1-4
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

SOWK - Social Work

SOWK 101  Introduction to Social Work 3
Prerequisite: Reading Level 5 and Writing Level 5
This course introduces the principles of social work practice. Emphasis is on social work careers, description of methods, skills and standards of practice, definitions of the helping roles, survey of helping agencies and institutions, and overview of social issues and client needs relative to social work practice. (F, Sp, Su)

SOWK 203  Social Work Interviewing 3
Prerequisite: HUSE 100 2.5 minimum or SOWK 101 2.0 minimum and Reading Level 5 and Writing Level 6
This course examines the purposes and basic concepts of the interview relationship with emphasis on the helping interview. It provides instruction in the techniques of interviewing with an opportunity to engage in practice interviews, including videotaping and feedback. (F, Sp)

SOWK 205  Social Welfare 3
Prerequisite: SOWK 101 2.0 minimum or HUSE 100 2.5 minimum
This course introduces the definition and concept of social welfare, its history, programs, attitudes, values, and philosophy. It emphasizes the development of private and public services, changing patterns of services, the evolving changes in the Social Security Act and community action, with attention to current issues in social welfare policy. (Sp)

SPAN - Spanish

SPAN 115  Conversational Spanish I 3
Prerequisite: None
First course of a two-semester sequence in conversational Spanish. Designed for persons who have no knowledge of Spanish and who wish to develop basic conversational skills in the language. Course emphasizes pronunciation of Spanish sounds, practical vocabulary, culture, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)

SPAN 116  Conversational Spanish II 3
Prerequisite: None
Recommended: SPAN 115 or Equivalent
Second course of a two-semester sequence in conversational Spanish. Designed for persons who have some knowledge of the language and wish to continue developing basic conversational skills. Course emphasizes practical vocabulary, some aspects of Hispanic culture, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)

SPAN 121  Elementary Spanish I 4
Prerequisite: Reading Level 5
First course of a two-semester sequence in elementary Spanish. Designed for persons with no knowledge of Spanish who wish to develop basic language skills. Elementary practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (F, Sp, Su)

SPAN 122  Elementary Spanish II 4
Prerequisite: SPAN 121 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in elementary Spanish. Introduces more complex structures while developing a foundation in the essentials of the language. Emphasizes practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (Sp)
SPAN 201 Intermediate Spanish I
Prerequisites: SPAN 122 1.5 minimum and Reading Level 5
First course of a two-semester sequence in Intermediate Spanish. Begins with review of grammar, and continues with intensive vocabulary building, listening comprehension, and writing compositions. Encourages conversation by introducing discussions about the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (F)

SPAN 202 Intermediate Spanish II
Prerequisites: SPAN 201 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in Intermediate Spanish. Continues a review of grammar, intensifies vocabulary building, strengthens listening comprehension and composition writing, and improves oral fluency through intensive discussions on the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (Sp)

SPCH 110 Oral Communication in the Workplace
Prerequisites: Reading Level 5 and Writing Level 5
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, giving planned presentations, and using current technology to enhance business communication. (F, Sp, Su)

SPCH 120 Dynamics of Communication
Prerequisites: Reading Level 5 and Writing Level 5
Introduction to the theory and practice of speaking and listening effectively in interpersonal, group, and public communication situations. The course utilizes readings, lectures, discussions, learning activities, and oral and written assignments to help students both understand the communication process and become more skillful interpersonal, group (team), and public communicators. (F, Sp, Su)

SPCH 130 Fundamentals of Public Speaking
Prerequisites: Reading Level 5 and Writing Level 5
Helps beginning speakers develop skills and confidence needed to speak effectively to audiences in public situations. Students learn proper techniques for researching, developing, organizing, outlining, and delivering effective informative, panel and persuasive presentations. At the same time, they learn interpersonal concepts that affect their work in group presentations. (F, Sp, Su)

SPCH 140 Interpersonal Communication
Prerequisites: None
Introduction to fundamental principles and skills of interpersonal communication. Students investigate techniques for interacting effectively in family, interpersonal, and workplace relationships. Class discussions, learning activities, and assignments assist students in examining the impact of their communication on others and in developing effective interpersonal skills. (F, Sp, Su)

SPCH 200 Nonverbal Communication
Prerequisites: 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
Prerequisites: Reading Level 5 and Writing Level 5
Introduction to broadcast, film, and print media and their impact on the individual and society. Students investigate theory and research on topics including values the media convey, media stereotypes, television, news, advertising, and the role of media in political campaigns. Assignments and observational projects help students become enlightened media consumers. (Sp)

SPCH 280 Intercultural Communication
Prerequisites: None
Introduction to the theory and practice of successful intercultural communication. Students will investigate how communication is affected by such factors as demographics of cultures, cultural values, world views, relationships, and social institutions. Readings, guest speakers, discussions, learning activities, and assignments will help students become ethical and skillful intercultural communicators. (F, Sp)

SPCH 285 Independent Study in Speech
Prerequisites: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

SPEL 150 Spelling: College Prep
Prerequisites: Reading Level 3 and Writing Level 4
Recommended: PHON 108
This eight-week course focuses on spelling rules and functions suited to various disciplines within the college and workplace. (F)

STAT 102 Introduction to Statistics
Prerequisites: MATH 121 2.0 minimum or MATH 126 2.0 minimum or MATH 130 2.0 minimum or MATH Level 8 and Reading Level 5 and Writing Level 4
Recommended: Knowledge of Windows Software
This is a survey course in statistics for students in social science, psychology, education, and other nonbusiness disciplines. Topics studied include descriptive statistics, probability, random variables, normal distribution, test distribution, chi-square distribution, F distribution, confidence intervals, hypothesis testing, correlation, and linear regression. In addition, students will solve applied problems by completing required computer assignments using a statistical software package. (F, Sp, Su)

STAT 215 Intro to Probability and Stats
Prerequisites: MATH 122 2.0 minimum or MATH 126 2.0 minimum or MATH 128 2.0 minimum or MATH 130 2.0 minimum or MATH 141 2.0 minimum or MATH Level 9 and Reading Level 5 and Writing Level 4
Recommended: Knowledge of Windows Software
This is a first course in probability and statistics with emphasis on business applications. Topics studied include descriptive statistics, laws of probability, random variables, normal distribution, test 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)

STECE 100 Intro to Stage Tech Industry
Prerequisites: Department Approval
This course is an introduction to the stage technology industry for apprentices in the Michigan Stage Technician Apprenticeship Program. It presents the history and current status of the various segments of the industry and introduces basic skills, terminology, safety concerns, and legal issues designed to prepare the apprentice for on-the-job training. (Su)

STECE 110 Stage Tech Field Experience
Prerequisites: Department Approval
Restriction: Stage Technology Majors and MSTAP Apprentices
This course provides Stage Technology majors and MSTAP apprentices with off-campus on-the-job training opportunities. Students will answer a variety of temporary job calls to support theatrical, arena, conference, sporting, and other events requiring the expertise of stage technicians. The student must be able to travel throughout mid-Michigan and to work odd hours. (F, Sp, Su)

STECE 120 Stage Lighting and Electricity
Prerequisites: None
Beginning studies in basic electricity and lighting as they relate to the stage. Students will learn fundamentals of electricity, metering, circuitry, physics of light and optics, instrumentation, reading of a plot, and various schedules. The student will then apply them in a theater setting. (F)

STECE 122 Advanced Stagecraft
Prerequisites: THEA 111 4.0 minimum
Advanced techniques of stagecraft and elements designed for the purifying arts. Preparation of working drawings and cut lists, fabrication of the design, lighting design techniques, and implementation of lighting applications. Application of color theory and techniques to scenic painting, lighting design, and costume. Students will assist with set design, lighting, and construction for a theatre production. (Sp)
STEC 130 Audio/Visual Technology 3
Prerequisite: None
An introduction to audio/visual equipment, principles and practices used in the stage technology industry with an emphasis on convention and trade show settings. Sound amplification, lighting control systems, simple video camera operation, and various projection devices will be included. (Sp)

STEC 140 Theatrical Make-Up/Wardrobe 3
Prerequisite: None
Provides students with a working knowledge of basic principles of makeup applications, wardrobe maintenance and procedures in a production environment. Prepares students to provide basic makeup and wardrobe services for live performing arts, including the theatrical play and dance productions, musicals and operas. An enrichment resource for community theater and schools. (F)

STEC 150 Stage and Arena Rigging 3
Prerequisite: None
Recommended: Basic Algebra
An introduction to rigging for the entertainment industry. The student will learn fundamentals of high steel, deck, grid, and stationary rigging. Rigging safety practices, safety hardware, rigging equipment, rigging hardware, and calculation of loads for the structure and hardware are covered. The student will apply those practices and equipment to stage and arena settings. (Sp)

STEC 290 Guided Independent Study 1-4
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSATCP Apprentices
Recommended: 75% Completion of the Stage Technology Program
An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration. (F, Sp)

STEC 290 STEC Internship 2
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSATCP Apprentices
An off-campus worksite experience that serves in part as a capstone experience for stage technicians. Students will work at venues having a multi-event season and be involved in building, installing, and as members of running crew. Regularly scheduled progress reports will be given and discussed with the supervising faculty member. (F, Sp, Su)

STEC 290 Special Projects 1-4
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSATCP Apprentices
Recommended: 75% Completion of the Stage Technology Program
An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration. (F, Sp)

SURG 100 Fundamentals of Surgical Tech 3
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 101 and SURG 121 and SURG 122
Introduction to role and function of the surgical technologist as a member of the surgical team. Lectures present all skills, procedures, and protocol necessary to participate in the operating room. (F)

SURG 101 The Surgical Patient 2
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 101 and SURG 121 and SURG 122
Lectures will present the protocol and procedures directly affecting the care and safety of the patient. This includes the ethical, legal, and moral responsibilities of the technologist, the concepts of patient care, and preoperative routines. (F)

SURG 103 Surgical Asepsis 2
Prerequisite: None
This course defines and describes pathogenic microorganisms and the causes and prevention of infection in the hospital. The student will be introduced to sterilization, disinfection, and other methods of controlling microbial growth. (F)

SURG 104 Operative Procedures 6
Prerequisite: SURG 101 2.5 minimum and SURG 102 2.5 minimum and SURG 103 2.5 minimum and SURG 122 2.5 minimum
Co-requisite Courses: SURG 123 and SURG 124
Lectures will present indications for surgery, medical and physical examination, surgical supplies, purpose and expected outcome, and possible complications. (Sp)

SURG 121 Applied Surg Techniques I 2
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 100 and SURG 101
This course is a clinical session with an assigned hospital. It covers the application of theory in the use of surgical supplies and equipment which will prepare students to scrub in for actual surgical procedures. (F)

SURG 122 Applied Surg Techniques II 4
Prerequisite: SURG 121 2.5 minimum or Concurrently
Co-requisite Courses: SURG 100 and SURG 101
This clinical session at a hospital is the student's first experience in application of theory and clinical skills in actual surgical procedures. (F)

SURG 123 Applied Surg Techniques III 8
Prerequisite: SURG 122 2.5 minimum
Co-requisite Courses: SURG 100
This clinical session at a hospital provides the student with continued application of theory and clinical skills in advanced surgical procedures. (Sp)

SURG 124 Applied Surg Techniques IV 2
Prerequisite: SURG 123 2.5 minimum or Concurrently
Co-requisite Courses: SURG 100
Clinical session at hospital. Application of theory and clinical skills in advanced surgical procedures and surgical specialties. (Sp)

TDP 100 - Truck Driver Training Program

TDP 110 Truck Driver Training I 3
Prerequisite: Department Approval and Department of Transportation
This is the initial course in a sequence of three. This course is intended to begin preparing the student for the State of Michigan CDL written exam and includes a review of DOT rules and proper driver's log book reporting. Vehicle activities include vehicle inspection, drop and hook, and initial driving on secured roadways. (F, Sp, Su)

TDP 111 Truck Driver Training II 3
This is the second course in a sequence of three. Students will operate the vehicles on the driving range and local roads, developing the skills necessary to interact with highway traffic. Students will pass the CDL written test and obtain their temporary instructional permits during this course. (F, Sp, Su)

TDP 112 Truck Driver Training III 3
This is the final course in the Truck Driver Training Program. The students will complete range driving and tracking, local highway driving, and complete an extensive road trip. The CDL third-party exam will be administered during this course. (F, Sp, Su)

THEA 100 Introduction to Theatre 3
Prerequisite: Reading Level 5
Introduction to Theatre includes definition and analysis of theatrical art, incorporating script analysis, theatre history, the relationship between theatre and the culture from which it comes, and the roles of theatre practitioners. (F, Sp, Su)

THEA 114 Intro to Technical Theatre 3
Prerequisite: Department Approval
Restriction: Theatre Majors
Introduction to design and construction of performing arts: basic elements of design and their relationship to performance. Includes lighting and painting, design concept, fundamentals of drafting, scale plan analysis, set construction, scenic safety, stage lighting, light plot interpretation, understanding organization of backstage productions. (F, Sp, Su)

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THEA 120 Introduction to Acting
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 scenes. (F, Sp, Su)

THEA 131 Studio Theatre Performance I
Prerequisite: Theatre Studio Interview
Restriction: Theatre Majors
Co-requisite Course(s): THEA 141 and THEA 171
Course includes rehearsal, performance, and evaluation of a contemporary script. Focus is on an understanding and implementation of skills acquired in THEA 141 and the relationships experienced between actor and director. (F, Sp)

THEA 132 Studio Theatre Performance II
Prerequisite: THEA 131 2.0 minimum
Restriction: Theatre Majors
Co-requisite Course(s): THEA 143 and THEA 173 and THEA 181
Course includes rehearsal, performance, and evaluation of verse script or scenes from Shakespeare or the classical Greeks. Focus on application of skills acquired in THEA 142, and on relationships between actor and director. Majors only. (Sp, Su)

THEA 140 Acting for Non-Majors
Prerequisite: THEA 120 2.0 minimum or Concurrently
Restriction: Theatre Non-majors
Recommended: THEA 110
Fundamentals of acting, including improvisational techniques; mask work; the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. Non-majors only. (F, Sp)

THEA 141 Acting I - Contemporary
Prerequisite: Theatre Studio Interview
Restriction: Theatre Majors
Co-requisite Course(s): THEA 131 and THEA 171
Fundamentals of acting, including improvisational techniques; mask work; the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. Majors only. (F)

THEA 143 Stage Voice for the Actor
Prerequisite: THEA 141 2.0 minimum
Restriction: Theatre Majors
Co-requisite Course(s): THEA 132 and THEA 173 and THEA 181
Course will cover strategies in vocal production and variety; will focus on exercises to develop vocal flexibility from Lasssic, Linklater, and/or Barry techniques; and will experience vocal techniques which lead to greater emotional awareness and responsiveness. For second-year theatre majors. (Sp, Su)

THEA 150 Acting for the Camera
Prerequisite: THEA 120 2.0 minimum
Recommended: THEA 110
Acting techniques and methods relevant to camera work will be explored. Students will be videotaped and critiqued. Acting for the Camera applies and builds on fundamentals established in Introduction to Acting. (F, Sp)

THEA 160 Stage Combat
Prerequisite: None
Recommended: THEA 120
Students learn to use a variety of weapons and hand to hand combat styles on stage. Students learn the style of combat used in theatre/film industry. Students explore fight scenes, basics of mechanics of choreographing fight scenes, and are instructed on basic safety procedures for choreographing/executing fight sequences. (F, Sp, Su)

THEA 171 Dramatic Form and Function I
Prerequisite: Theatre Studio Interview
Restriction: Theatre Majors
Co-requisite Course(s): THEA 131 and THEA 141
An analysis of modern contemporary classics of the theatre. The student will read and analyze a minimum of eight contemporary scripts from Ibsen to Shepard. The student will develop a comprehensive production concept for one of these scripts. (F, Sp)

THEA 173 Movement for the Actor
Prerequisite: THEA 141 2.0 minimum
Restriction: Theatre Majors
Co-requisite Course(s): THEA 132 and THEA 143 and THEA 181
Course will cover strategies in developing students' physical endurance, reflect, flexibility, and grace. Students will learn the human inner experience in the sphere of human silence. Students may explore movement to music, mime, and/or dance styles and techniques from world cultures. For second-year theatre majors. (Sp, Su)

THEA 181 Improvisation
Prerequisite: THEA 141 2.0 minimum
Restriction: Theatre Majors
Co-requisite Course(s): THEA 132 and THEA 143 and THEA 173
By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development. (Sp, Su)

THEA 210 Theatre History
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: THEA 110
Examination of the history of drama from primitive times to the present, introducing the overall pattern of theatre history with emphasis on European and American development. Required for all majors. (F, Sp)

THEA 220 Play Directing
Prerequisite: THEA 110 2.0 minimum or FILM 118 2.0 minimum
Recommended: THEA 120 or THEA 210
Introduction to the fundamentals of directing a play, including play analysis, stage composition and working with actors. Practical experience through workshop and class exercises will be emphasized. Students will demonstrate mastery of the principles taught by directing and presenting a short one-act play for an audience. (F)

THEA 223 Independent Study in Theater
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

THEA 224 Special Subjects in Theatre
Prerequisite: Department Approval
Seminar: Special Subjects in Theater is offered each summer and allows students to take a variety of short-term courses in various theater techniques. The seminar will offer either state-of-the-art techniques or an opportunity to work with professionals. Seminars may include: stage combat, playwriting, new techniques in acting. (Su)

THEA 233 Studio Theatre Performance III
Prerequisite: THEA 132 2.0 minimum
Restriction: Theatre Majors
Co-requisite Course(s): THEA 240 and THEA 280
Studio Theatre Performance III provides rehearsed and performance opportunities in oral interpretation and/or readers theatre presentations. Usually offered in eight-week format. Second-year theatre majors only. (F)

THEA 235 Studio Theatre Performance IV
Prerequisite: THEA 223 2.0 minimum
Restriction: Theatre Majors
Co-requisite Course(s): THEA 241 and THEA 271 and THEA 283
This course provides the second-year Theatre major with an opportunity to intensively explore two contrasting theatrical periods and styles through the rehearsal and performance of monologues, scenes, or short plays. (Sp)

THEA 237 Theatre Special Projects
Prerequisite: Department Approval
Seminar: Special Projects provides the opportunity to direct, design, perform, or produce productions for College functions on the main stage or in the LCC performance space. Limited to individuals who have been selected as cast members or technical or design staff in a scheduled LCC performance. (F)

THEA 238 Theatre Company
Prerequisite: Theatre Application Process
Students will be given the opportunity to direct, design, produce, or perform in College-supported outdoor theatrical events in the amphitheatre or a comparable space. Students will also participate in company class, in which new ideas in acting training will be presented. (Su)
THEA 240 Acting II - Classics 2.5
Prerequisite: THEA 143.2.0 minimum (previously THEA 142)
Restriction: Theatre Majors
Co-requisite Courses: THEA 233 and THEA 260
Fundamentals of acting in heightened context. Students will pursue improvisational, mask work, and scoring. Students will develop an understanding of the power of language through verse; scenography; and the physical, vocal, and internal development of characters from classical literature. Majors only. (F)
THEA 241 Acting III: Acting Styles 2.5
Prerequisite: THEA 240.2.0 minimum (previously THEA 142)
Restriction: Theatre Majors
Co-requisite Courses: THEA 235 and THEA 271 and THEA 283
Explores acting techniques and styles of different historical periods and/or cultures. Student will survey a cross-section of acting styles and periods and focus on in-depth exploration of particular period or style. Class limited to second-year majors. In-depth area of study selected by instructor. (Sp)
THEA 260 Dramatic Form and Function II 3
Prerequisite: THEA 143.2.0 minimum (previously THEA 251)
Restriction: Theatre Majors
Co-requisite Courses: THEA 233 and THEA 240
Dramatic Form and Function II focuses on the writings of Shakespeare and the classical Greeks. The student will read a minimum of eight classical scripts, analyze them using Aristotelian analysis, and research one corpi in terms of production styles through history. (F)
THEA 271 Dramatic Form and Function III 3
Prerequisite: THEA 260.2.0 minimum (previously THEA 172)
Restriction: Theatre Majors
Co-requisite Courses: THEA 225 and THEA 241 and THEA 283
Students will study 5-6 texts of various periods and styles of western dramatic literature in terms of their historical context and as an aesthetic approach. The class will culminate in the performance, by each student, of a monologue, scene or short play of at least two contrasting periods or styles. (Sp)
THEA 283 Audition Workshop 1
Prerequisite: THEA 240.2.0 minimum (previously THEA 142)
Restriction: Theatre Majors
Students will learn audition and resume preparation and will prepare and polish two contrasting monologues for auditions. Students will learn the audition and application process for advanced training. (Sp)
THEA 285 Stage Makeup 2
Prerequisite: None
A course in the application of stage makeup to develop a character and to assist the actor in maintaining the character in performance. Emphasizes skills in the use of different kinds of makeup, hairstyling, and appearance changes. (Sp)
TRVL 109 Travel Agency Operations 3
Prerequisite: Reading Level 3
In this course students will gain a working knowledge of the reference materials used in the travel industry, as well as industry terminology and overall travel agency operations. (F, Sp, Su)
TRVL 125 Destinations I 3
Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in North, Central, and South Americas with specific information related to client appeal. (F)
TRVL 130 Destinations II 3
Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in Europe, Africa, and the Middle East with specific information related to client appeal. (Sp)
TRVL 131 Destinations III 3
Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in Asia and the Far East (including the Philippines, Japan, Australia, New Zealand and Oceania) relative to client appeal. (F)
TRVL 135 Airline/Airport Operations 3
Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 or TRVL 150
This course provides an introduction to the responsibilities of airline and airport personnel as well as the functions of an airport and airline carriers. Discussion includes ticket counter operations, the gate area, cargo handling and loading, aircraft weight, and the principles of aeronautics. (Sp)
TRVL 140 Online Computer Reservation I 3
Prerequisite: None
Recommended: TRVL 100 and Typing 30 wpm
The first of a three-course sequence utilizing the Worldspan reservation system. Hands-on application in the Travel Computer Lab gives students the skills required for creating airline computer reservation as well as airline and fare rules. (F, Sp)
TRVL 145 Intro Cruise Sales/Ground Trans 3
Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 or TRVL 150
This course explores the travel industry by developing an understanding of the reference materials used to market cruises, railroads, car rentals, and motor coach travel for domestic and international destinations. (Sp)
TRVL 170 Owning/Managing Travel Agency 3
Prerequisite: None
Recommended: Minimum 2.0 in TRVL 100 and TRVL 140
Learn how to open or acquire a travel agency. Includes an examination of co-ops, consortia, and franchise options, as well as an overview for managing daily operations. (F)
TRVL 190 Internship 2
Prerequisite: Department Approval
Recommended: Have completed a minimum of 30 credits Available to students who would like practical work experience in tourism or travel agency operations. A term project is required. (Sp, Su)
TRVL 200 Sales/Mktg for Travel/Tourism 3
Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 or TRVL 150
This course develops an understanding of marketing strategies by identifying client needs, product, price, and promotion. It develops professional sales skills, as well as examines and develops advertising pieces. (F)
TRVL 210 Group Travel/Escorting Ops 4
Prerequisite: None
Recommended: Minimum 2.0 in TRVL 145 and (HMFS 101 or TRVL 150)
Learn how to organize and escort both domestic and international group tours. Includes procedures for locating the group, assembling and marketing the tour package, and effectively concluding the tour. (Sp)
TRVL 230 Travel/Tourism Law 3
Prerequisite: None
Recommended: Minimum 2.0 in (TRVL 100 or TRVL 135 or TRVL 210) and (HMFS 101 or TRVL 150)
This course includes current topics as well as pending laws and discussion of the consequences that result in violating the law for different segments of industry. Students will become aware of the responsibilities and rights that the law imposes on the travel industry. (Sp)
TRVL 260 Airline Computr Reservation II 3
Prerequisite: TRVL 140.2.0 minimum
The second of a three course sequence utilizing the Worldspan system which progresses to in-depth fare research and application, as well as fare rules, and hotel/reservation for domestic and international travel. (F, Sp)
TRVL 260 Travel Agency Accounting 2
Prerequisite: None
Recommended: TRVL 100.2.0 minimum
This course is designed to explain and describe basic travel agency accounting concepts. Approximately one half of the course will be dedicated to the compila-
TRVL 265 Fund of Business Travel 3
Prerequisite: TRVL 250 2.0 minimum
Recommended: Minimum 2.0 in HIMS 101 and TRVL 145 and TRVL 210 and TRVL 230

In this course students will learn how to manage the many issues surrounding business/corporate travel. Special requests, international reservations, fare rulings and routings, currency exchange, internet research, and frequent flyer program management for business/corporate travelers, as well as the customs, cultures, and protocol in International travel are emphasized. In addition, extended use of the Sairis computer reservation system is utilized. (F, Sp)

TRVL 275 Travel Industry Practice 3
Prerequisite: TRVL 265 2.2 minimum and CAB 110 2.0 minimum
Recommended: Minimum 2.0 in HIMS 101 and TRVL 145 and TRVL 210 and TRVL 230

In a work-site setting students will combine and analyze day-to-day industry challenges faced by travel associates and the travel industry. They will design, organize and present travel recommendations to potential clients through the coordination of information using the Internet, Microsoft Office, and Word/Excel. Techniques for problem-solving, needs assessment, and industry analysis will be included. (F, Sp)

VCBL 150 Vocabulary: College Prep 1
Prerequisite: Reading Level 3 and Writing Level 4

This eight-week course focuses on the acquisition of vocabulary appropriate to the various disciplines within the college and workplace. (F, Sp)

VIET - Vietnamese

VIET 121 Elementary Vietnamese I 4
Prerequisite: Reading Level 5

This course is designed for students with little or no knowledge of Vietnamese. Students will acquire elementary reading, writing, speaking and listening skills, with particular emphasis given to tones and pronunciation. Cultural and traditional aspects will underlie every phase of learning. (F)

WELD 100 Combination Welding 4
Prerequisite: None

This is a beginning theory and practice course which will introduce the safe operations and applications of oxyacetylene welding, cutting, brazing and shielded metal arc welding. Practice will consist of these methods of joining steel in the horizontal, flat and vertical positions. Destructive testing will also be provided. (F, Sp, Su)

WELD 101 Advanced ARC Welding 4
Prerequisite: WELD 100 1.5 minimum

Students will develop the skills necessary to produce quality multiple pass fillet and groove welds on steel plates. Conventional and low hydrogen electrodes are used in preparation of passing performance tests in all positions. Destructive testing methods, weld profiles and welding symbols as related to arc welding are introduced. (F, Sp, Su)

WELD 110 Gas Metal ARC Welding 4
Prerequisite: WELD 100 1.5 minimum

Provides technical understanding and applications of gas metal arc welding and flux cored arc welding. Fundamentals, safety, equipment adjustments, metal transfer and shielding gases will be covered. Develops manual skill in all positions on different thicknesses and types of metals, including mild steel, aluminum and stainless steel. (F, Sp, Su)

WELD 111 Gas Tungsten ARC Welding 4
Prerequisite: WELD 100 1.5 minimum

Students will develop the skills, principles and applications of gas tungsten arc welding and plasma arc welding. Welds will be done on different thickness of ferrous and non-ferrous metals in all positions. Proper material cleaning, fit up and safety are also introduced. (F, Sp, Su)

WELD 120 Structural Fabrication/Inspection 4
Prerequisite: WELD 101 1.5 minimum

Introduction to steel fabrication in accordance with the American Welding Society Structural Welding Code D1.1 applications and requirements. The student will be introduced to the numerous destructive and nondestructive methods of welding inspections. Satisfactory completion of this course will assist the student in passing a welding certification test. (F, Sp)

WELD 125 Structural Blueprint Reading Weld 2
Prerequisite: MATH 120 1.0 minimum or Math Level 4

Blueprint and welding symbols are the universal language of the welding industry. This course is for students, apprentices, technicians and others who must develop the ability to read and accurately interpret blueprints. Teaches awareness of the advancement in metallurgy, welding processes, consumables and strict code enforcement used in industry today. (F)

WELD 140 Creative Welding 2
Prerequisite: None

Recommended: Course work or experience in art/design

This is a course for people with an interest in artwork in a metal medium. Participants will become familiar with welding and cutting processes for the purpose of exploring creative expression. (F, Sp)

WELD 201 Tool and Die Welding 4
Prerequisite: WELD 101 1.5 minimum and WELD 111 1.5 minimum

Theory and practice methods involved in welding various alloyed metals, preheating and postheating of metals, recognition of materials, alloying elements and their effects. The proper usage of gas, oil and water hardening steels will also be covered. (F, Sp)

WELD 205 Pipe Welding 4
Prerequisite: WELD 101 1.5 minimum

Threading, cutting, fit up and practice on different sizes of pipe using shielded metal arc welding. Various weld and base metal testing methods are used to test the strict code requirements. Focus on low hydrogen type electrodes in groove and fillet welds in the 2G, 5G, and 6G positions. (F)

WELD 210 Aircraft Welding 2
Prerequisite: Department Approval

Recommended: 2.5 GPA or greater

Presents welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aviation maintenance techniques. (F, Sp)

WELD 250 Welding Internship 3
Prerequisite: Department Approval

Recommended: 2.5 GPA or greater

This course provides welding students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (F, Sp)

WRIT - Writing

WRIT 100 Writing Laboratory 4
Prerequisite: Reading Level 1 and Writing Level 1

Designed to teach fundamental writing skills and to introduce the student to the writing process. Emphasizes sentence structure, components of a paragraph, and critical reading with written responses. Intended for students whose writing skills lie within the WRIT Level 1 score range of the College Placement Test. (F, Sp, Su)

WRIT 110 Confidence in Writing 4
Prerequisite: Reading Level 2 and Writing Level 2

Recommended: Minimal Typing Skills Desirable

Designed to help students understand the writing process, reduce writing anxiety, and develop basic writing skills. Emphasizes planning, composing, and revising strategies for experiential writing. Provides frequent writing practice in a supportive workshop environment. Students who earn exit competency of 2.5 will have a writing skill level of 4. (F, Sp, Su)

WRIT 114 Business English 3
Prerequisite: Reading Level 3 and Writing Level 4

This course is designed to review all parts of grammar, punctuation, and sentence structure. Special emphasis will be given to rules covering proper usage of punctuation, capitalization, possessives, number usage, plurals, and mechanics for written business communication. Business English is required for machine transcription and recommended for business writing. (F, Sp, Su)

WRIT 117 Writing Preparation 4
Prerequisite: Reading Level 3 and Writing Level 4

Recommended: Minimal Typing Skills Desirable

Designed to help students improve their writing in preparation for transfer-level academic courses. Students who earn exit competency of 2.5 will have a writing skill level of 6. (F, Sp, Su)
WRIT 118 - Personal Writing
Prerequisite: None
Explains the various forms of personal writing (diaries, journals, letters, personal narratives, and autobiography) through written exercises and selected readings. The students' observations and life experiences are the focus of written assignments. Emphasizes language, style, and tone appropriate to the different forms of personal writing. (F, Sp)

WRIT 119 - Writing Skills Review
Prerequisite: Reading Level 5 and Writing Level 6
Designed to help WRIT 121-122 composition students, and others, improve their basic sentence and mechanics skills by providing intensive writing and editing practice in a workshop setting. (F, Sp, Su)

WRIT 121 - Composition I
Prerequisite: Reading Level 5 and Writing Level 6
Composition I is the study and practice of expository discourse to help students write more effectively. It emphasizes writing process, critical thinking, content development, organization, and style. Students will select their best work for their portfolio, which will be externally assessed. (F, Sp, Su)

WRIT 122 - Composition II
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 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 of structure, style, and tone of the research paper. Some sections use computer classrooms. Others are offered over the Internet or interactive television. (F, Sp, Su)

WRIT 124 - Technical Writing
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Computer and/or Keyboarding Experience
A college-level course in the study and practice of technical writing in a variety of forms for selected 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 work individually and collaboratively. (F, Sp, Su)

WRIT 127 - Business Writing
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Computer and/or Keyboarding Experience
College-level study of the theory and practice of business communication in a variety of forms, with emphasis on letters, memoranda, and written reports, including research based reports. Also covers job applications, resumes, and collaborative reports. (F, Sp, Su)

WRIT 131 - Honors Composition I
Prerequisite: Writing Level 7
Honors Composition I is the study and practice of expository discourse to help students write more effectively. It emphasizes writing process, critical thinking, content development, organization, and style. Students will select their best work for their portfolio, which will be externally assessed. (F, Sp)

WRIT 132 - Honors Composition II
Prerequisite: WRIT 131 3.5 minimum or WRIT 131 3.5 minimum
Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development of structure, style, and tone of the research paper. Some sections use computer classrooms. Others are offered over the Internet or interactive television. (F, Sp)

WRIT 260 - Creative Writing I
Prerequisite: None
Recommended: WRIT 121
This course is designed to help students develop expressive abilities in writing poetry and short stories. Emphasizes narrative modes of the short story and free verse forms and traditional forms of poetry. Students read and analyze models from modern fiction and poetry. (F, Sp)

WRIT 264 - Writing for Publication
Prerequisite: None
Recommended: WRIT 121
Study of freelance writing and marketing, with focus on fiction. Students review a variety of effective writing techniques, study marketing information for their particular fields such as a store's novelties and potential publishers and quirky letters, and discuss their writing in a workshop setting. Students prepare manuscripts for submission to editors. Word processing available. (F, Sp, Su)

WRIT 270 - Creative Writing II
Prerequisite: WRIT 260 2.0 minimum (previously WRIT 285) or Department Approval
Emphasizes developing the ability to write effective poems, short stories, and novels. Students select their own subjects and receive immediate responses through group discussion. (F, Sp)

WRIT 278 - Writing the Novel
Prerequisite: WRIT 260 2.0 minimum (previously WRIT 285) or WRIT 264 2.0 minimum (previously WRIT 281)
This course addresses all aspects of writing a novel. Classroom sessions will emphasize finding a narrative voice, establishing story characters, and developing a workable plot. Students will receive feedback on their fiction in a workshop setting. Publishing information will be provided, but will not be a focus of the course. (F)

WRIT 279 - Prose Style
Prerequisite: None
Recommended: WRIT 121
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 280 - Creative Writing III
Prerequisite: WRIT 260 2.0 minimum (previously WRIT 285) or Department Approval
Examines language and style as the most critical tools of a creative writer. Makes written language central to the student's perception of and response to the world. Develops the writer's ability to control tone and style. Manuscripts will be reproduced and discussed in a workshop setting. (Sp)

WRIT 282 - Forum for Authors
Prerequisite: WRIT 260 2.0 minimum (previously WRIT 285) or WRIT 270 2.0 minimum (previously WRIT 281) or Authors' Writing Test
An advanced course in freelance writing for authors working on manuscripts. Students meet in a workshop setting to refine ideas, critique writing, solve problems, and develop material for submission to periodicals or book editors. Includes advanced study of effective writing techniques and market information. Occasional speakers. Word processing available. (F, Sp)

WRIT 285 - Independent Study in Writing
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

WRIT - Writing: Restricted

WRIT 101 - Writing Practice I
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide additional individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)

WRIT 102 - Writing Practice II
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide additional individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)

WRIT 103 - Writing Practice III
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide additional individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)
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Bath, Dansville, DeWitt, East Lansing, Grand Ledge, Haslett, Holt, Lansing, Leslie,
Mason, Okemos, Stockbridge, Waverly, Webberville and Williamston.
Learning Centers Locations and Building Codes

CHARLOTTE
(CHS)-Charlotte High School
378 State St., Charlotte

CORUNNA
(CORNHS)-Corunna High School
417 E. King St., Corunna

DANVILLE
(DNSVLE)-Dansville High School
1264 E. Adams, Dansville

DEWITT
(DEWTHS)-Dewitt High School
3100 W. Clark Rd., Dewitt

DIMONDALE
(DSUMMT)-The Summit
9410 Davis Hwy., Dimondale

EAST LANSING
(EHLHAN)-East Lansing Hannah Center
819 Abbott Rd., East Lansing

FOWLERVILLE
(FWLRV)-Fowlerville High School
7577 Sharp Rd., Fowlerville

GRAND LEDGE
(GLSAW)-Grand Ledge Sawdun
220 Lamson St., Grand Ledge

HASLETT
(HASLCE)-Haslett Community Education
1580 Franklin St., Haslett

HOLT
(HOLTHS)-Holt High School
1784 N. Aurelius Rd., Holt

(Old high school beginning Fall 2003)
1784 N. Aurelius Rd., Holt

(HCJLT)-Holt Junior High School
(Called North Campus beginning Fall 2003)
5700 W. Holt Rd., Holt

(HORIZN)-Horizon Elementary School
5776 W. Holt Rd., Holt

HOWELL
(HWLHS)-Howell High School
1200 W. Grand River, Howell

(LIVCEN)-Livingston County Center
1600 Pinckney Rd., Howell

LAINGSBURG
(LESSHS)-Laingsburg High School
8000 Woodbury Rd., Laingsburg

LANSING
(LLLH)-Harry Hill Vocational School
5815 Wise Rd., Lansing

(STAR)-STAR Institute
5815 Wise Rd., Lansing

(LCATHC)-Lansing Catholic Central
501 Marshall St., Lansing

MASON
(CGACC)-Capital Area Career Center
911 Hagadorn Rd., Mason

(LHWO)-Heartwood School
625 Hagadorn Rd., Mason

(MASUFC)-Mason Urgent Care Facility
800 E. Columbia St., Mason

(MHS)-Mason High School
1001 S. Barnes St., Mason

(MMSI)-Mason Middle School
235 Temple St., Mason

OKemos
(CKCEC)-Chippewa Middle School
4000 Okemos Rd., Okemos
(Entrance via Kinawa Drive)

OWOSSO
(CWOSSO)-Owosso High School
765 E. North St., Owosso

PERRY
(PERRY)-Perry High School
2775 Britton Rd., Perry

PORTLAND
(PORTL)-Portland High School
1100 Ionia St., Portland

ST. JOHNS
(ISTURCC)-Clinton County Center, St. Johns
1015 S. US 27, Suite C, St. Johns

STOCKBRIDGE
(ISBHS)-Stockbridge High School
416 N. Clinton St., Stockbridge

WAVELRY
(WAWIMS)-Waverly Middle School
620 Snow Rd., Lansing

WILLIAMSTON
(WMSHTS)-Williamston High School
3845 Vanmeter Rd., Williamston