LANSING COMMUNITY COLLEGE
ESTABLISHED IN 1957

1993-94 CATALOG

400-600 North Washington Square, P.O. Box 40010, Lansing, Michigan 48901-7210, Telephone: (517) 483-9850
Handicapper Student Services Telephone Device for the Deaf, TDD (517) 483-1218
Accredited by North Central Association of Colleges and Schools

WELCOME TO LCC

Lansing Community College is committed to excellence in education. Since its beginning in 1957, the College has grown from a small technical college to one of the largest, most comprehensive community colleges in the nation. Classes are offered year-round on the 26-acre campus in the heart of Michigan’s capital.

Students can choose from 162 degree and certificate programs and more than 2,500 course offerings or complete the first two years of a liberal arts education. In addition to the programs offered on the main campus, the College operates an Aviation Center at Capital City Airport in Lansing and the Truck Driver Training Center near Battle Creek. To make classes more accessible, a number of Learning Centers are located in communities within the College’s 30-mile service area. LCC is accredited by the North Central Association of Colleges and Schools and serves more than 40,000 persons annually. The College recently held its 35th commencement, evidence of LCC’s success in providing education as a lifelong process for all.
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Please keep this catalog for future reference to the lifelong learning opportunities that are available at Lansing Community College. Education is a lifelong process, and LCC continues to be a resource for its students through the nation and the world. Futures begin at LCC, and they can be enriched—over and over again, for a lifetime.

This catalog was produced by Publications and Advertising Services, Lansing Community College.

Contributing Photographers: Sandy Davison, Paul Koch, John Rocco and Roger Ward
MISSION STATEMENT

The mission of Lansing Community College is to provide lifelong education based on traditional and contemporary values, and to create a dynamic educational environment that enables individuals to enrich their personal, professional and occupational lives.

Lansing Community College will continue to develop partnerships with the community that foster support and understanding for mutually beneficial endeavors. The College recognizes the diverse community it serves, and believes in nurturing and promoting a climate that supports and respects the value of this diversity.

Lansing Community College is committed to standards of excellence in the programs that it offers through general education, career training and transfer programs, basic skills education, and supportive services to the students, community, business and industry at the local, national and international levels.

STRATEGIC GOALS

1. Maintain and develop the highest standards of academic and curricular and co-curricular excellence in order to promote recruitment, retention and student success in a diverse society.

2. In recognition and awareness of the value of the College's human resources, continue to provide professional development activities as a commitment to faculty, staff, students, and community.

3. Recruit faculty, staff and students to promote academic excellence while continuing to emphasize diversity, affirmative action and equal opportunity in staffing and student body.

4. Emphasize critical/analytical thinking skills across the College's curricula.

5. Emphasize writing, reading, speaking, and listening skills across the College's curricula.

6. Develop sufficient technology skills in students, faculty and staff to enable them to function in a modern technological environment.

7. Continue to be sensitive to the issues of statewide governance, coordination and planning.

8. Continue to strengthen the College's international and external communications.

9. Enhance the College's resource base in order to maintain the quality of its education, training, support services, and activities.

10. Develop and enhance partnerships with business, industry, government, labor, public agencies, health service organizations, K-12 school districts, colleges, and universities.

11. Increase the internationalization of the College's curricula and services in recognition of the competitive international marketplace, world interdependence and a pluralistic society.

12. Provide continuous development, review and evaluation of the College's total learning environment.

13. Increase educational opportunities through the use of learning/extension centers and state-of-the-art telecommunication systems.
Lansing Community College

BOARD OF TRUSTEES

Sharon A. Reid
Chair

Melvin M. Villarreal, Ph.D.
Vice Chair

Ronald A. Nichols, M.D.
Secretary

Joseph M. Kildea
Treasurer

James E. Byrum
Trustee

Dorothy D. Jones
Trustee

M. Kate Murphy
Trustee
A MESSAGE FROM THE PRESIDENT

Dear Students:

On behalf of the Board of Trustees and the faculty and staff at LCC, welcome to Lansing Community College.

This catalog represents a changed educational framework for Lansing Community College. For the first time, the College will operate on a semester calendar rather than a term calendar. These changes were made to help strengthen our instructional programs. We believe our new academic structure will allow us to provide better service to our students and our community.

Our commitment to you is based on a partnership between the College, our students and the community. You are the central focus of our College and its broad array of programs and services.

Lansing Community College is truly a comprehensive community college. As you use this catalog to plan your LCC experience, we ask that you do your best to reach your potential. We will do our best to provide a learning environment to make this possible.

Cordially,

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

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ACADEMIC CALENDAR

Fall Semester 1993
Classes Begin August 31
Labor Day September 6
Thanksgiving November 25 - 28
Last Day of Classes December 23

Spring Semester 1994
Classes Begin January 15
Spring Break March 7 - 13
Last Day of Classes May 13
Graduation Day May 15

Summer Session 1994
Classes Begin June 13
Independence Day July 4
Last Day of Classes August 8

Registration information and dates are published in the Schedule Book for each semester or call the Office of the Registrar.

POLICIES, PROCEDURES AND REGULATIONS

ADMISSIONS INFORMATION

GENERAL ADMISSION CRITERIA

Lansing Community College is an "open door" community college designed to extend service to applicants possessing appropriate preparation to benefit from programs and courses offered at the College. Determination and judgment of an individual's preparation and readiness to benefit from a course or program at Lansing Community College is the responsibility of the College 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. Those who do not meet these requirements may still attend LCC in special circumstances. High school students may be admitted to LCC under the dual enrollment or special admissions programs explained later in this section. In all cases, students should be aware that admission to the College does not guarantee admission to a particular program.

GENERAL ADMISSION PROCEDURES

A. Procedures for completing the admission application are as follows:
   1. Complete all items requested on the application for admission.
   2. Attach a $10 application fee (check or money order made payable to LCC) to the application. This is a non-refundable fee. Once paid, the fee does not have to be paid again.
   3. Lansing Community College applicants in high school or those who graduated from high school in the last year should forward the application and fee to their high school. The counselor or principal will complete the lower portion of the application and mail it along with high school records to Lansing Community College.
   4. Other applicants may forward the application and fee to 25-Admissions Office, Lansing Community College, P.O. Box 40010, Lansing, MI 48901-7210.
   5. Lansing Community College provides placement assessment testing and recommendations for students in courses requiring proficiency in reading, writing, mathematics and science.

B. Some courses require particular basic skills proficiency levels prior to enrollment. Students are encouraged to arrange for testing and follow-up advising prior to registration to avoid delays. Information relating to placement testing may be obtained by contacting:
   Reading and Writing—Academic Enrichment Center located in Room 309 (third floor) of the Arts & Sciences Building, phone: (517) 483-1060.
   Math—Mathematics Laboratory located in Room 309 (third floor) of the Arts & Sciences Building, phone: (517) 483-1090.
   Science—Science Department located in Room 408 (fourth floor) of the Arts & Sciences Building, phone: (517) 483-1092.
   Placement testing is also given in English as a second language, vocabulary, and spelling for designated students.
   Phase I of the S.T.A.R.T. (Student Testing Advising Registration Times) Program requires students to take appropriate placement tests prior to attending Phase II (advising and registration) of the Program.

Admission decisions that require evaluations of special circumstances, including the ability to benefit from attendance, will be considered on an individual basis for the following categories:
   Health Career Applicants
   International Student Applicants
   Dual Enrollment—Special Admission
   Other Special Circumstance Applicants

All questions and requests for specific information regarding these special circumstance admission procedures should be directed to Lansing Community College, 25-Admissions Office, P.O. Box 40010, Lansing, Michigan, 48901-7210, or call (517) 483-1200.

SPECIAL PROGRAM/SPECIAL CIRCUMSTANCE ADMISSION

Health Careers Technology Programs

Applicants to any Health Career Technology Program at Lansing Community College should contact the Admissions Office for specific information concerning the process and prerequisites. Call (517) 483-1254 or write 25-Admissions Office, Lansing Community College, P.O. Box 40010, Lansing, MI 48901.

International Applicants

Lansing Community College's international student admission procedures have been developed to create a positive experience for the international student, the service community, and the College community.

Admissions requirements for international students are affected by U.S. Immigration and Naturalization Service (USINS) regulations. In accordance with USINS regulations, any individual who is not a U.S. citizen and who has been admitted to the U.S. on temporary resident status will be classified as an international student at Lansing Community College. Individuals who have refugee, immigrant, or resident alien status are not international students.

The visa classification of each international applicant determines the admission requirements and the attendance regulations applied to the applicant. For details on the requirements for each visa type, the applicant should refer to the International Admissions Application packet. To request the packet contact: 25-Admissions Office, Lansing Community College, P.O. Box 40010, Lansing, MI 48901-7210.

General admission requirements for all types of visas are (1) be at least 18 years old; (2) prove successful completion of studies equivalent to U.S. high (secondary) school; (3) provide proof of competency in the English language; and (4) provide additional documents as required by the USINS visa classification.

Admission to LCC as an international student will be considered after receipt of the application, $10 application fee, and all required documents. All admission material must be received by the College no later than eight weeks prior to the first day of on-campus registration for the semester of attendance. Applicants outside the U.S. are advised to apply as early as possible to allow for mail delays; to obtain visas and exit permits, and to make travel arrangements.

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

Admission procedures are subject to review by the International Student Services Committee. Any changes made will be brought to the attention of the students. Admissions Office staff, international student advisor, faculty, and administrative staff.

The International Student Services Committee has established in the Division of Student and Academic Support with the following membership:
   1. Dean of the Student and Academic Support Division
   2. Director of Admissions
   3. Director of International Programs
   4. Bilingual Coordinator
PEAPEL OF COLLEGE ADMISSION

Any applicant denied admission to the College may appeal this decision to the Director of Admissions, provided the Director has not rendered the initial denial to the student. The decision to admit or deny admission will be based on the individual merits of each appeal. The decision shall be given to the applicant in writing within seven (7) calendar days of the date of appeal.

In the event that the Director of Admissions does not admit an appealing applicant, that applicant may carry his/her appeal to the Admissions Board of Review. This petition must be made in writing within seven calendar days, but not later than through the fourth day of the semester of application. The Board will be convened in an expeditious manner, and a decision will be rendered within in seven calendar days of the date of the applicant’s written appeal. Members of the Admissions Board of Review are a departmental chairperson and a representative and a counselor appointed by the Dean of Student and Academic Support.

If the applicant is not satisfied with the decision of the Admissions Board of Review, an appeal may be made to the Admissions Board of Appeals. This appeal must be submitted in writing to the Chairperson of the Board of Appeals within seven calendar days of the applicant’s receiving the decision of the Admissions Board of Review, but not later than through the fifth day of the semester of application.

Members of the Admissions Board of Appeals are Dean of Student and Academic Support, a departmental chairperson, the dean of the division of the applicant’s curricular choice, and a representative from the Department of Student Development Services. The Board of Appeals may, upon reviewing the merits of the case, render a decision or schedule a hearing with the applicant prior to rendering a decision. The review by the Board of Appeals will be conducted in an expeditious manner and a decision will be rendered within seven calendar days of the date of the applicant’s appeal. The decision of the Board of Appeals is final.

The decisions of the Admissions Board of Review and the Board of Appeals will be reached by simple majority vote, and a record will be maintained in the Admissions Office regarding the decision(s) of these Boards.

The applicant will be notified in writing of the decision(s) of the Boards.

FINANCIAL AID INFORMATION

The Student Financial Services Program at Lansing Community College assists students who demonstrate need in meeting some of the college costs that cannot be met by personal or family resources. An objective method of need determination approved by the Federal government is used to evaluate the student and family’s financial circumstances. Some scholarships are available that are based on academic achievement or talent.

Students are eligible to apply for financial assistance if they have graduated from high school, have completed a GED, or they have ability to benefit by testing. They must be enrolled in collegiate programs of study leading to a one-year certificate, two-year degree, or four-year transfer program and must be citizens or permanent residents of the United States. Enrolment in a program of study abroad that is approved for credit by Lansing Community College is considered to be enrollment at Lansing Community College for purposes of applying for federal student financial assistance.

Sources of Financial Assistance

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

Scholarships: Non-repayable money, usually awarded for academic achievement or talent that may or may not be based on need.

— Board of Trustees Scholarships are awarded to outstanding district high school graduates.
— Divisional Scholarships are awarded to outstanding students who are residents of the district who apply directly to the college division or department of their area of study. Students may contact the Financial Aid Office for information.
— Athletic Scholarships are awarded through the Athletic Department. Talented athletes contact coaches of their respective sports.
— Michigan Competitive Scholarships are based upon a qualifying examination given during the junior and senior years in high school. Students may receive an "honorary" award not based on need or a monetary award based upon need.
— Private Scholarships are available through the College or private organizations. A Scholarship and Financial Aid Booklet is available in the Office of Student Financial Services giving information about private scholarships, grants, loans, employment and college transfer scholarships available to LCC students.
— Foundation Scholarships are provided through the Lansing Community College Foundation Office.

Grants: Non-repayable money usually based upon need.

— Federal Pell Grants are based on need by filing an LCC Admissions and Financial Aid Form and Free Application for Federal Student Aid. Students must submit the Federal Pell Grant Student Aid Report, received through the mail, to the LCC Office of Student Financial Services to receive the grant.
Supplemental Educational Opportunity Grants are awarded to "high" need students by submitting the same application forms as for Pell Grants.

Michigan Educational Opportunity Grants are awarded to needy students who have been Michigan residents at least 12 consecutive months.

Michigan Adult Part-time Grants are awarded to self-supporting, part-time (3-11 credits), needy students who have been out of a high school program for at least two years and who have been Michigan residents for the past two months.

Tuition Incentive Program (TIP) pays community college tuition and fees for students from low-income families. Eligible students must be under 20 years of age and have graduated from high school or obtained a GED (General Education Development Certificate) after April 1988, and must meet the low income financial guidelines.

Women's Resource Center Grants are available for tuition and child care for displaced homemakers and special populations. Students apply through the Women's Resource Center, Student Personnel Services Building, 2nd Floor.

Center for Aging Education Tuition Assistance is available to persons 65 years of age or older for up to four (4) credits per semester. Students must meet moderate income guidelines. Students apply through the Center in 207 Old Central Building or call (517) 483-1179.

**Loans:** Money that must be repaid beginning six to nine months after graduation or enrollment of less than six (6) credits with the exception of the SLS/PLUS loans which must be repaid immediately.

- Perkins Loans, formerly the National Direct Student Loans, are low interest loans determined upon the basis of need. Students apply by filing an LCC Application for Federal Financial Aid Application and a Free Application for Federal Student Aid.
- Federal Family Education Loan Program includes the following loans. Specific guidelines pertaining to eligibility and the application process are available in the Financial Aid Office.

1. Stafford Guaranteed Student Loan (GSL) are for students that have needs which cannot be met with other types of financial aid. Students apply following the same procedure outlined for the Perkins loan. In addition, they must complete a Stafford Loan Application which is available from their bank, savings and loan association, or credit union. Students must apply two (2) months or more before funds are needed.
2. Supplemental Loan for students (SLS) are higher interest loans for self-supporting adult students who do not qualify for other types of financial aid or who need additional aid. The applications are available from banks, savings and loan associations or credit unions. The application form is the same as the GSL, SLS, and PLUS.
3. Parent Loan for Undergraduate Students (PLUS) are loans for parents to help their dependents pay college costs not covered by other financial aid. Applications are available at the bank, credit union, or savings and loan association. If the parent is refused an application or loan, PLUS forms are available at the Student Financial Services Office.
- MI-LOAN is a Middle Income Loan provided by the State of Michigan. Criteria used to determine eligibility is similar to that of Stafford or Supplemental Loans. The one major difference is that the MI-LOAN is a credit-based loan.
- Short-Term Loans are available on a limited basis through the Student Financial Services Office for tuition and books.

**Employment:** Job opportunities to assist students in earning money to meet part of their educational expenses.

- Federal College Work Study is based upon need. Students submit an LCC Admissions and Financial Aid Application Form and a Free Application for Federal Student Aid.
- Michigan Work Study is awarded to needy students to help meet expenses while attending college. Students may be employed by the College, public non-profit organizations, private business and industry. Student aid positions are available to students at the College based upon skills and abilities and not necessarily upon need.
- The College Placement Office at LCC posts federal work study jobs, student side jobs, and off-campus part-time and full-time jobs. Students obtain information at the Placement Office and must interview at the department's or employer's office.

**Special Situation Funds:** Funds are available for certain students. The College's Student Financial Services Office has information regarding application procedures for the following programs:

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

**How and When to Apply:** Financial Assistance Forms are available to students and their parents through high school counselors or at the College Student Financial Services Office located in the Student Personnel Services Bldg., 1st floor. To make application for financial assistance at the College (2) forms must be submitted:
1. An LCC Application for Admission and Financial Assistance Form must be completed and returned to: 28-Student Financial Services, Lansing Community College, 450 N. Capitol, Box 40010, Lansing, Michigan 48901.
2. A Federal Financial Aid Application must be submitted.

**Stafford Student Loans, Supplemental Loans, and Parent Loans for Undergraduate Students are available by completing the above forms and the loan application. Loan applications are available at banks, savings and loan associations, and credit unions. Also, a loan information sheet must be completed. This form is available at the Student Financial Services Office.

**LCC Board of Trustees Scholarship forms are available through the Office of Student Financial Services.

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

**Financial Aid Funds are limited:** Therefore, it is to the student's advantage to make early application for financial assistance. It is recommended that students apply by the month of March prior to the school year for which attendance is planned. Applications will be accepted after March, but awards will be made only if funds are available.

Students transferring from other colleges must submit a Financial Aid Transcript from their previous colleges when they apply for financial assistance at LCC.

**Processing of the student's application for financial assistance will be completed and the student will be notified once the student has submitted the following:**
- LCC Application for Admission and Financial Assistance to the Admissions Office and the Federal Pell Grant Student Aid Report (SAR), which the student receives through the mail; Financial Aid Transcripts to the Office of Student Financial Services and any additional documents required by the Office of Student Financial Services.

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

**Rights and Responsibilities of Students Receiving Financial Assistance**

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

**Need and Financial Assistance Package**

Financial need is determined by subtracting the expected family contribution and other financial resources from the appropriate College budged. 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 financial assistance or awarding of assistance, they will be corrected. Finally, any changes that occur in the student's financial circumstances other aid be provided to the student, the student will report these changes to the Office of Student Financial Services.

**Expected Family Contribution**

If a student is a dependent student, the College assumes that parents have the 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/her own education from personal assets and earnings, which may include the need to borrow against future earnings.

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

 falsification of information:

Falsification of information submitted by the student or parents for the purpose of receiving financial assistance may result in cancellation of assistance, billing back for assistance received, and referral to the appropriate federal authorities. The Office of Student Financial Services may be required to verify information provided on the Financial Assistance Form by requiring income tax statements or other documentation of financial status.

**Credit Hour Load**

Fall and Spring Semester:

Financial assistance is offered to students based on enrollment as a full-time student, 12 credit hours or more per semester. If a student enrolls in less than 12 credits, his/her award is prorated to meet their enrollment. For example, if a student enrolls in 9-11 credits, he/she would receive 75 percent of his/her award.
If a student enrolls in 6-8 credits, he/she would receive 50 percent of their aid. If a student enrolls in less than six credit hours, they will not be eligible for most federal programs. A student enrolled in 3-11 credits may be eligible for the Michigan Adult Part-time Grant.

Summer Semester:
Summer semester is shorter than fall and spring semesters. Students need only be enrolled for six credits to be considered full-time for purposes of financial aid, five credits to be considered three quarter time, and three credits to be considered half-time. Enrollment for less than three credits will make a student ineligible for financial aid. The length of the summer semester 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 semester compared to the regular fall and spring semesters.

Courses Not Eligible For Financial Aid Payment
Federal regulations prohibit the payment of courses classified as below the secondary level and audited courses for non-credit. These courses do not count when determining financial aid eligibility and cannot be billed to financial aid.

Budgeting Financial Aid Package
The student is responsible for properly budgeting all financial aid offered for each semester. The financial aid package will be distributed to the student in the following manner: (1) tuition and fees will be deducted from the financial aid during registration if sufficient funds are available and if tuition and fees are not paid by the student or other sources; (2) the student will receive an advanced financial assistance check during the first full week of classes, if the student is eligible; and (3) the student will receive the balance of grants, loans, or scholarships approximately one week after the end of the College's 50 percent refund period. The student must be prepared to meet his/her living expenses during the period prior to check distribution.

Financial Assistance Advance Check
CHECK DISTRIBUTION: Checks are issued two times each semester at the Cashier's Office if financial aid awards exceed the amount of tuition and fee charges. Students use this money for books, supplies, transportation, room and board. Advance checks are printed one time each semester at the end of on-campus registration. Final checks are printed at the end of the 60 percent refund period. Students who receive an advance check normally receive a final check.

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

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

Tuition Refund
If the student paid tuition and/or fees entirely out of personal funds and received no financial aid funds, any refund will go directly to the student.
If tuition and fees are paid from financial aid funds, refunds will be allocated to the programs from which the student received aid. The amount refunded to any program may not be greater than the amount the student actually received from that fund.
Tuition Refunds for students receiving federal financial aid are returned to accounts in the following order: (a) to outstanding balances on FFEL Program loans; (b) to outstanding balances on Federal Direct Loans; (c) to outstanding balances on Federal Perkins Loans; (d) to Federal Pell Grant Awards; (e) to Federal SEOG awards; (f) to awards under the FWS Program; (g) to other Title IV student assistance; and (h) to the student.

Students withdrawing from LCC for the first time who completely withdraw during the first 60 percent of an enrollment period will have some portion of their tuition and fees refunded. Funds may be released to students only if repayment is not required.

Repayment of Grants
If a student withdraws from Lansing Community College or is withdrawn by the College because of non-attendance, a portion of any grants awarded to the student may be repaid and graded received may affect continuation of aid.

Satisfactory Academic Progress Requirements
To continue on financial assistance, students must maintain "Satisfactory Academic Progress" each term. Satisfactory Academic Progress for students receiving federal financial assistance is defined as follows:
1. Students must maintain a grade point average (GPA) above a 1.99 on a semester and cumulative basis.
2. Students must complete 60 percent or more of the credits attempted on a semester and cumulative basis.
3. Students receiving financial aid at Lansing Community College for the first time and who do not make satisfactory academic progress are required to attend an orientation session in order to remain eligible for their aid.
4. After five semesters of enrollment, students are required to have a cumulative grade point average (GPA) of 2.00 or higher and have completed a minimum of 60 percent of credits attempted. If a student is suspended because of unsatisfactory progress, with more than one semester but less than five semesters of enrollment, the student may be readmitted and allowed to re-enroll under an educational contract with Project STAY. A student will be considered as making satisfactory academic progress for financial assistance programs as long as the student adheres to the terms of the educational agreement, or until the student has raised his or her cumulative grade point average to 2.00 or greater and has a cumulative completion ratio of at least 80 percent of all courses attempted.

Students who do not successfully complete the semester of their educational contract with Project STAY will be cancelled from financial assistance.
After four semesters, students with GPAs lower than 2.00 or who have completed less than 60 percent of credits attempted, will have their aid eligibility cancelled. When they have improved their academic standing, they may be reconsidered for financial aid.

Students applying for Federal Family Education Loans must have completed at least one semester of prerequisites or core courses with a 2.0 GPA at 60 percent completion prior to submitting their application for a loan. Students with more than one semester of enrollment must complete the two semesters prior to the beginning of the loan period and the semesters within the loan period with a minimum grade point average (GPA) of 2.00 or greater. They must also successfully complete at least 60 percent of the courses attempted in each of the two semesters prior to the beginning of the loan period.

Renewal of Financial Assistance
Financial assistance is not automatically renewed. Awards are granted for one year only. A student must reapply for assistance for the following year by completing all required application forms by stated deadlines on the application. For renewal, a student must be enrolled in a certificate or degree program.
To be continued on financial assistance, the student must not be in default on any past educational loans at LCC or another college. Also, the student must not owe any repayments for educational grants due to withdrawing from college or be placed on academic probation because of poor attendance.
A student will not be awarded federal financial assistance at Lansing Community College beyond 120 credits. A transfer student will not be awarded Federal financial assistance beyond 120 credits, including transfer credits accepted by LCC.

1. Students who have attempted 120 credits or have a bachelor's degree may be recommended for a Stafford Student Loan to complete a degree or certificate program for the purpose of obtaining employment.
2. Special Circumstances beyond the student's control on a documented, written appeal

Rights of 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.

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/her package. The student may meet with a financial assistance advisor to discuss extenuating circumstances to the above policies or any other policies affecting the student as an assistance recipient.
A financial assistance review committee will meet periodically to consider written appeals.

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

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

The functions for this committee are:
1. To assist in the development of programming and procedure with the Office of Student Financial Services of the College.
2. To assist in the evaluation of existing programs and programming within the Office of Student Financial Services of the College.
3. To assist in the area of communications about the student financial assistance program and to provide input from the various sub-populations of the College.

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Veterans Information

Veterans Services helps the veteran file applications for education, counseling, loans, tutorial assistance, and/or any other entitlements allowed through the Veterans Administration.

Lansing Community College is approved as a school for veterans of military service under provisions of Chapters 31, 32, 34, and 33 of the U.S. Code.

Lansing Community College cautions veterans matriculating under this program to be prepared to pay their expenses for at least two months after the beginning of the academic year. (ALL TUITION AND FEES MUST BE PAID AT THE TIME OF REGISTRATION.) Once the veteran's application is approved and his/her 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 Veterans Services Office at least five (5) weeks prior to the beginning of a semester. Monetary allowances provided by the G.I. Bill vary according to the level at which the veteran is pursuing an academic program as indicated by the following schedule.

<table>
<thead>
<tr>
<th>Level of Attendance</th>
<th>Required Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time</td>
<td>Minimum of 12</td>
</tr>
<tr>
<td>Three-quarter time</td>
<td>9, 10 or 11</td>
</tr>
<tr>
<td>Half time</td>
<td>6, 7 or 8</td>
</tr>
</tbody>
</table>

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

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

In addition, the College participates in the Army College Fund, Michigan National Guard Co-op, Air Force ROCT program, Army ROTC program, and USMC open admissions program.

Satisfactory Progress for Veterans' Benefits Eligibility

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

Certification Policy for Veterans Administration Educational Benefit Recipients

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

HOUSING

Lansing Community College maintains no housing units for students, nor does it enter into third party contracts or supervise off-campus housing.

REGISTRATION INFORMATION

REGISTRATION PROCEDURES

Each semester Lansing Community College publishes a Class Schedule Booklet 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. Students are encouraged to arrange for testing and advising prior to registration to avoid delays when registering.

SEMESTER CLASS SCHEDULES

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

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. international students are not eligible to pay resident tuition.

   I. 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, by written agreement, agrees to pay directly to the College all tuition and fees of the sponsored student for employer-approved classes.

   II. Proof of Residency

      All students must provide proof of residency at the time of registration (Michigan House Bill No. 4166, 1985). Lansing Community College reserves the right to make the final decision on residency eligibility. To be classified as a resident, a student must have lived within the LCC district for six months immediately prior to the first day of the semester of enrollment. AN UPDATED MICHIGAN DRIVER'S LICENSE OR A DATED VOTER'S REGISTRATION CARD PLUS ONE OF THE DOCUMENTS LISTED BELOW ARE ACCEPTABLE AS PROOF OF RESIDENCY.

      1. Property tax receipts
      2. Rental or lease agreement
      3. Canceled rent checks (one for each month of residency)
      4. The purchase of property within the LCC College District eliminates the waiting period for the establishment of residency. The student or the student's guardian must reside on the property. Acceptable proof of ownership includes:
         a. Deed Abstract of Title
         b. Current Tax Statement

   III. Petitioning for a Change in Residency Status

      Upon registering for classes, a student shall be notified of his/her residency status.

      1. If the student feels that his/her residency status is not correct, the student may furnish the required proof of residency and the residency status will be corrected.
      2. After acceptance into the College as a non-resident, a student who has resided in the College district for six (6) months and can furnish the required proof of residency can have his/her residency status changed.
      3. If a change of residency status is approved by the published deadline date, the difference between resident and non-resident tuition for the current semester shall be refunded.
      4. Adjustments in tuition due to a change in residency are not retroactive to previous semesters.

IV. Non-Resident Owners of In-District Property

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

Payment of Tuition and Fees

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

<table>
<thead>
<tr>
<th>Tuition per Credit Hour</th>
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<tbody>
<tr>
<td>Resident Students</td>
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<tr>
<td>Non-Resident Students</td>
</tr>
<tr>
<td>Out-of-State Students</td>
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<tr>
<td>International Students</td>
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</tbody>
</table>

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

I. Student Initiated Withdrawal
A. If a student finds it necessary to withdraw from the College, he/she should contact the Office of the Registrar immediately and complete a Drop 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 prior to the end of the fourth week of the semester, no final grade is issued and the withdrawal class is not recorded on the academic record. A copy of the Student-Initiated Drop Form is maintained in the Office of the Registrar.
D. If a student withdraws at the end of the fourth week of the semester, a grade is issued by the instructor at the time of the withdrawal. A grade will be placed on the final grade report and recorded on the academic record.

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

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

A. In the case where a student fails to meet the attendance requirements of the class, the instructor may initiate an administrative withdrawal through the Office of the Registrar.
B. In the case where a student does not have the prerequisites for a particular course, the classroom instructor consults with the student regarding the potential of administrative withdrawal. At this time, the instructor may recommend that the student withdraw from the particular course. If the student chooses not to withdraw, the instructor may initiate an administrative withdrawal through the Office of the Registrar.
C. In the case where a student behaves in a manner that interferes with the instructional process, the classroom instructor consults with the student regarding the potential of administrative withdrawal. At this time, the instructor, with the co-recommendation of the appropriate departmental chairperson, may recommend to the Office of the Registrar in writing that the student be administratively withdrawn. 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 prior to the end of the fourth week of the semester will not receive a grade and no record of attempting the class will appear on the academic record. A copy of the administrative withdrawal form is maintained in the Office of the Registrar. A student who is withdrawn after the end of the fourth week of the semester will be given a grade of W at the time of withdrawal.

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

III. Procedure for Resolving Health-Related Student Problems
In a situation in which a serious (physical or emotional) health-related problem is evident, the College’s responsibility is to offer to assist the student in the removal of the behaviors that interfere with the student’s performance and involvement while at Lansing Community College. In such event, 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.
   2. It appears that there has been 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 office or agency, on or off campus. Assistance from the Office of the Dean of Student and Academic Support and/or the counselors is available, if desired.
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 department to handle.
   2. Referral 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 department can be of no further service.
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 2.00 cumulative GPA, successful completion of a specified course in government, and is recorded on the official academic record.

Certificate of Achievement: The certificate of achievement consists of a minimum of 30 semester credits in designated courses. It is earned with a minimum of 2.00 cumulative GPA and is recorded on the official academic record.

Certificate of Completion: The certificate of completion consists of fewer than 30 credits in designated courses and is earned with a minimum of 2.00 cumulative GPA and is not recorded on the official academic record.

Credit Hour: A credit hour is an instructional unit carried out for the expressed purpose of eliciting some measure of educational change in a learner or group of learners. A credit can be awarded on a student’s academic transcript when he or she successfully completes a unit of instruction of not fewer than 800 instructional minutes.

Course: A course is a sequence of planned learning experiences leading to a set of expected learning outcomes. Course activities are normally scheduled over an academic semester. A student’s successful completion of a course earns academic credit based on contact hours in class or in laboratories. The student also earns an academic grade which evaluates the student’s success in achieving the expected outcomes. A course routinely includes tests, grades, a final examination, and regular out-of-class assignments. At Lansing Community College, a standard college-wide course syllabus has been created for each course. A course is published in the College Catalog and the Class Schedule booklet.

At Lansing Community College a course is not to be confused with a seminar, workshop, or fee-for-service learning/training unit.

Curriculum: A curriculum is a structured program of study leading to an associate degree or certificate. Each curriculum is assigned a number. (Certain transfer curricula do not lead to an associate degree.)

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

Prerequisite: A prerequisite is a course or other requirement that must be successfully completed 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>Grade</th>
<th>Narrative</th>
<th>Guideline for Performance</th>
<th>Achievement of Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Excellent</td>
<td>91% to 100%</td>
<td>80% to 90%</td>
</tr>
<tr>
<td>3.5</td>
<td>Good</td>
<td>81% to 85%</td>
<td>70% to 75%</td>
</tr>
<tr>
<td>3.0</td>
<td>Satisfactory</td>
<td>71% to 75%</td>
<td>60% to 65%</td>
</tr>
<tr>
<td>2.5</td>
<td>Poor</td>
<td>61% to 65%</td>
<td>50% to 55%</td>
</tr>
<tr>
<td>2.0</td>
<td>Failure</td>
<td>0% to 50%</td>
<td>0% to 50%</td>
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</table>

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

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

2. All incompletes issued prior to fall semester 1993 must be completed by the end of fall semester 1993 (or earlier if an earlier date was set by the instructor). Effective fall 1993, all incompletes must be completed by the end of the next regular semester unless an extension is requested in writing by the student and approved in writing by the instructor and department by the last day of the semester.

3. 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.

4. 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 is received by the Office of the Registrar prior to the end of the fourth week of the semester, no grade will be recorded on the student's academic record. Approved requests for withdrawal received by the Registrar after the last day of the fourth week of the semester will result in a "W" on the student's record. If the request for withdrawal is not approved, a grade consistent with the course requirement will be assigned by the instructor when final grades are submitted.

5. An "R" (return) grade indicates that a student will be returning to a course later. No credit is granted for such designations. They are used for "open lab" courses only.

COMPUTING GRADE POINT AVERAGE

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

<table>
<thead>
<tr>
<th>Numerical Grade</th>
<th>Honor Points</th>
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</thead>
<tbody>
<tr>
<td>4.0</td>
<td>4.0</td>
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<tr>
<td>3.5</td>
<td>3.5</td>
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<td>0.0</td>
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</tbody>
</table>

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

CREDIT/NO-CREDIT GRADING (P-Z)

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

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

2. Courses offered on the P-Z grading system will be published as being graded only on the P-Z grading system and the course syllabus will 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 ten percent of the total credits required for a degree or certificate may be acquired on the P-Z system.

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

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

2. Grades granted on the P-Z system are determined with definition of P and Z as follows:
   a. P (credit) represents a level of performance equivalent to a regular number grade of 2.00 or above on a 4.00 system.
   b. Z (no credit) represents a level of performance less than 2.00 on a 4.00 system: no credit is granted.

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

GRADE REPORTS

An official academic grade report will be mailed to the student approximately one week after the close of each semester. The grade report will be withheld if the student has a financial obligation to the College that has not been fulfilled.

GRADE CHANGES

Students may petition an instructor for a grade change of a final grade in a course. The line of appeal for grade change petitions can be found in the College’s "Due Process" statement. A student's final grade in a course may be changed by the course instructor. Grade changes made by instructors are done by submitting signed grade change forms to the departmental office for review and approval by the departmental chairperson. The completed grade change form is then forwarded to the Office of the Registrar for posting on the student's
permanent academic record. Completed grade change forms are not to be carried by the petitioning student to the Office of the Registrar and will not be processed. Students will be officially notified in writing by the Office of the Registrar after a grade change has been completed.

ACADEMIC STANDING POLICIES

Table for Determining Academic Standing

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

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

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

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

Definitions of the various academic ranges at Lansing Community College are listed immediately after the table. Please refer to these definitions for an exact explanation of your academic status. A detailed explanation of the academic withdrawal appeal process has been included.

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

<table>
<thead>
<tr>
<th>ACADEMIC STATUS</th>
<th>Semester Credits Completed</th>
<th>Good Standing Range</th>
<th>Warning Range</th>
<th>Withdrawal Range</th>
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<tbody>
<tr>
<td></td>
<td>1-7</td>
<td>1.88 and above</td>
<td>1.00 - 1.87</td>
<td>.99 or less</td>
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<td></td>
<td>8</td>
<td>1.01 - 1.88</td>
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<td>9</td>
<td>1.04 - 1.88</td>
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</tbody>
</table>

Satisfactory Progress

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

Warning Range: A student whose cumulative grade point average is in the "Warning Range" is making minimum satisfactory academic progress. This student is strongly advised to consult with the course instructor or department head, see a counselor, or request a tutor. Information about services to support student learning is available in the LCC Student Guide.

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

Unsatisfactory Progress

Withdrawal Range: A student whose cumulative grade point average is in the "Withdrawal Range" is making unsatisfactory academic progress and will be withdrawn from the College. However, a student who fails in the "Withdrawal Range" may be allowed to re-enroll on probation. If that student places in the "Withdrawal Range" again in any semester after that, the student will be withdrawn from the College.

Appeal of Academic Withdrawal

Any student who has been academically withdrawn from the College may appeal the withdrawal to the Academic Hearing Officer in the Student and Academic Support Division. The decision to reinstate or not reinstate a student will be based on the individual merits of each appeal.

In the event that the Academic Hearing Officer does not reinstate a student, that student may appeal within seven calendar days, but not later than the fourth day of classes, in writing to the Matriculation Board of Review on a form provided by the Academic Hearing Officer. The Board will be convened in an expeditious manner and may render a decision within (7) calendar days of the student's written appeal. Members of the Matriculation Board of Review are: a representative from the Office of the Registrar (chairperson), a representative appointed by the Dean of Student and Academic Support, and a counselor appointed by the Dean of Student and Academic Support. In the event that the student is not in agreement with the decision of the Matriculation Board of Review, the student may appeal the decision to the Board of Appeals. This appeal must be submitted in writing to the Chairperson of the Board of Appeals within seven (7) calendar days of the student receiving the decision of the Matriculation Board of Review. Members of the Board of Appeals are Dean of Student and Academic Support (chairperson), the dean of the division of the student's curricular choice, and the head of the counseling staff. The Board of Appeals is empowered to modify the decision of the Matriculation Board of Review, and render a decision or schedule a hearing with the student prior to rendering a decision. The review by the Board of Appeals will be conducted in an expeditious manner and a decision will be rendered within seven calendar days of the date of the student's appeal. The decision of the Board of Appeals is final.

The decisions of the Matriculation Board of Review and the Board of Appeals will be reached by simple majority vote, and a record will be maintained (in the Office of the Register) regarding the decisions of these Boards. The student will be notified in writing of the decisions of these Boards.

STUDENT RECORDS

The Office of the Registrar maintains the official permanent academic record of every student who attends the College. Each student's record is updated at the close of each semester. The student's academic record includes courses waived, courses attempted and completed, courses and credit transferred, credit hours, honor points, and Lansing Community College grade point average.

STUDENT ACCESS TO RECORDS

A student and/or parent of a student, if the student is a dependent and/or is less than 18 years of age, shall have the right, upon proper identification, to inspect and review any and all official records, files and data directly related to the student. These records include, but are not limited to, identifying data, academic work completed, standardized test scores, attendance data, inventory results, health data, family background data, and instructor or counselor ratings and observations. Requests to inspect and review student files shall be in writing to the Office of the Registrar and shall be responded to within a reasonable period of time, but in no case more than 45 days after the request is made.

The student shall have an opportunity for a hearing before a College official designated by the President to challenge the contents of the student's records, to ensure that the records are not inaccurate, misleading or otherwise in violation of the privacy or other rights of the student; and to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate information.

Written approval by the student or parent concerned is required before release will be given of personally identifiable information from the student's records or files. Exceptions to this statement include releasing information to:

1. Academic and administrative officials of Lansing Community College. Academic and administrative officials are defined as those members of the College who act in the student's educational interest within the limitations of the official's need to know. Officials may include faculty, administration, clerical, and professional employees, and other persons who manage student record information.

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www.lcc.edu
2. High schools, colleges, and other educational institutions in which the student is enrolled or intends to enroll. Students will be notified as to the information released if the request does not emanate from the student.
3. Individuals and organizations who provide financial aid or scholarships to students.
5. Appropriate authorities in compliance with judicial orders and pursuant to lawfully issued subpoenas. The student will be notified of any such orders or subpoenas by the College.
6. Accrediting organizations carrying out their accrediting function.
7. Persons in an emergency, if the knowledge of the information in fact is necessary to protect the health or safety of students or other persons.
8. Parents of a student who have established that student’s status as a dependent according to Internal Revenue Code of 1954, Section 152.

Those individuals, agencies, or organizations external to the College who desire access to student records and files and who fail in the exclusions above shall sign a written form indicating specifically the legitimate interest for seeking the information. The forms shall include the names and addresses of the individual and/or agency requesting the information. These forms shall be maintained in the Office of the Registrar.

Records of request and student file disclosures need not be maintained for those requests made by academic and administrative officials of the College. Each academic and administrative official of the College is subject to the requirements of the Family Educational Rights and Privacy Act of 1974, as amended, which prohibits the release of personally identifiable information without the student’s written consent. A hold may be applied to the release of a transcript or other information requested from the academic records of a student who has an overdue indebtedness to the College, except that the student shall have personal access to such records.

Students may request that their academic records be given to any person or group by submitting their requests in writing to the Office of the Registrar.

Student lists shall not be distributed to non-College agencies.

STUDENT TRANSCRIPTS

Official transcripts of a student’s record at Lansing Community College will be mailed at the written request of the student. An official transcript is one which has the school seal and states the date of gradation if a degree has been granted.

A fee is charged for each transcript. All transcript requests require two working days’ notice.

TRANSFER OF CREDITS

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

ACCEPTANCE AND EVALUATION OF TRANSFER CREDITS FROM OTHER INSTITUTIONS

Only official transcripts will be evaluated for transfer credit. The credit value of each of the courses will be determined by Lansing Community College. The College will accept as official transcripts only incoming transcripts that have appropriate signatures and official college seals and that are mailed directly to the Lansing Community College Office of the Registrar 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 have not been identified as official. It is the function of the Office of the Registrar of the College to verify the official status of all incoming transcripts prior to the evaluation and posting of transfer credit. All transcripts submitted to LCC for evaluation become the property of LCC.

The following evaluation information applies to transcripts received from both accredited and non-accredited institutions. Additional evaluation information which applies to transcripts from non-accredited institutions may be found under "Non-accredited Institutions."

Accredited and Non-accredited Institutions

1. Freshman and sophomore level courses are accepted in transfer. Higher level credits are accepted if they correspond to a specific course at Lansing Community College. In most cases, the course will be accepted for a corresponding Lansing Community College course and an effective credit. In cases where Lansing Community College does not have a department or area similar to the courses on incoming transcripts, no credit will be given.

2. Credits only, not grades, are transferred for 2.00 (C) or better courses. When the overall grade point average of a transferring student is at or above a 2.00 on a 4.00 scale, the student may petition the departmental chairperson of his/her academic department to waive a requirement(s) in which he/she has previously earned the 1.0-1.5 or "D." Waiver of a course requirement does not provide credit for a course. The departmental chairperson of the department concerned will notify the Office of the Registrar of all waivers.

3. No evaluation is made when a student has received a two- or four-year degree from another institution. This may be done upon request, but it is assumed that the student is pursuing an entirely different curriculum and credit is not needed previously.

4. A student may request a change in the evaluation if he/she feels that a course description differs from the way in which it was evaluated. A determination on the evaluation will be made by the departmental chairperson in conjunction with the Office of the Registrar. Verification of the change can be made through the Office of the Registrar.

Non-accredited Institutions

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

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

2. The departmental chairperson has the following four prerequisites in evaluating transcripts issued by non-accredited institutions:
   a. Credit may be granted with demonstration by the student of skills commensurate with the performance required for satisfactory completion of existing courses.
   b. Credit may be granted upon review of the content, goals, and objectives of a particular course with determination of whether the course is on a par with existing courses of the College. It is the responsibility of the student to provide requested materials to enable proper evaluation.
   c. Credit may be granted upon demonstration of proficiency in a particular existing course by a comprehensive examination.
   d. Credit may not be granted.

3. The departmental chairperson will return the transcript to the Office of the Registrar and indicate whether the credits awarded and the course equivalency at Lansing Community College. The final transcript evaluation will have the signature of the appropriate division dean.

4. When two or more instructional departments are involved, the departmental chairperson of the department in which the student is enrolled will be responsible for consulting with the additional departmental chairpersons.

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

CREDIT FOR PREVIOUSLY ACQUIRED KNOWLEDGE AND LEARNING EXPERIENCE

Lansing Community College recognizes that learning outside of the classroom is valid. Therefore, it is the College’s function to assist extra-institutional learning as part of its credentialing responsibility. Any student who is currently enrolled at Lansing Community College may apply for experiential learning credit by obtaining an Experiential Learning Processing Form from the Office of the Registrar. Student and Academic Support Building, (517) 483-1226.

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 student, based on experiential learning, may not be used for financial aid or veteran’s benefits eligibility.

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

Application Procedures

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

A fee of the resident tuition rate per credit hour will be charged for those credits which are determined awardable and which apply to the student’s program (curriculum). Fees are subject to change by the Board of Trustees without prior notice.
Assessment Committee
The completed Experiential Learning Processing Form and portfolio of supporting documents will be forwarded by the Office of the Registrar to the respective division dean. The dean will assign the portfolio to an appropriate and impartial assessor for review and credit assessment. Assessors have the responsibility for evaluation and assignment of academic credit for experiential learning.
In the evaluation process, the assessor will verify the accuracy and validity of the information stated on the Experiential Learning Processing Form and the accompanying supporting documents by contacting various references and former employers whose names have been provided. If all is in order, the assessor will determine whether the student’s experiential learning fits into appropriate competency and subject areas within the student’s educational program (curriculum) at Lansing Community College. The assignment of credit must be stated in terms of equivalent courses which are offered by the respective divisions of Lansing Community College.

Documentation
All experiential learning must be documented by the student. Documentation may be defined as (but not limited to) complete job descriptions, copies of course materials and outlines, certificates, training reports, signed supervisory verifications and evaluations on letterhead, and any other descriptive information that may provide a clear understanding of a student’s background and competencies. Lansing Community College requires certification that the work or training experience is the student’s own. The portfolio containing the Experiential Learning Processing Form and all supporting documents will be retained by the College. A maximum of 10 semester hours of experiential learning may be applied towards an LCC associate degree. (Twenty credits must be earned at Lansing Community College to comply with the College’s residency requirements.)

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

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

CREDIT BY EXAMINATION
Comprehensive Exams
A student may obtain credit for certain courses at the discretion of an instructor and department head by passing comprehensive examinations only during the semester in which the student is enrolled. The procedure a student uses to obtain comprehensive examination credit is as follows:
1. The student picks up an application for credit by examination at the Office of the Registrar.
2. The student completes the required information on the application and takes the application to the department for instructor and departmental chairperson signatures of approval.
3. After obtaining the required signatures, the student returns the signed application to the Cashier’s Office for payment of tuition.
4. The student will complete an examination for each course in which he/she hopes to receive credit.
5. An examination will not be given by the instructor until the student presents the appropriate payment receipt. No more than one examination will be given for a single payment.
6. The examination, after being evaluated by the instructor, will be maintained on file in the departmental office.
7. The Office of the Registrar will contact the department and request the grade which was earned upon completion of the examination. A grade will be recorded for each comprehensive examination given.
8. The student will receive an official notice of the grade earned at the end of the semester in which the examination was taken or when processing has been completed.

Other Examinations
Lansing Community College accepts credit based on results from the following examinations: College Level Examination Program (CLEP), Advanced Placement Examination (APE), and the Defense Activity for Non-Traditional Education Support (DANTES). Students in need of information about these examinations should contact the Office of the Registrar.

GRADUATION REQUIREMENTS, CERTIFICATES, AND DEGREES
INSTITUTIONAL REQUIREMENTS FOR CERTIFICATES OF ACHIEVEMENT
Certificates of achievement are granted to all students who meet graduation requirements. A minimum of 30 semester credit hours is required for this certificate.
To graduate from Lansing Community College with a certificate of achievement, a student must do the following:
1. Complete a course of study approved by the College.
2. Maintain a minimum grade point average of 2.0.
3. Earn toward graduation at least 10 semester credits in attendance at Lansing Community College.
4. File an application for graduation with the Office of the Registrar one semester preceding the semester of graduation.
5. Satisfy all general and specific requirements of Lansing Community College including the fulfillment of all financial obligations.
6. Have the approval of the administration and the Board of Trustees.

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

INSTITUTIONAL REQUIREMENTS FOR ASSOCIATE DEGREES
Associate degrees are granted to all students who meet graduation requirements. A minimum of 60 semester credit hours is required for an associate degree. Those students who maintain a 3.75 grade point average will be graduated with summa cum laude; those who maintain a 3.50 grade point average will be graduated magna cum laude; those with a 3.25 will be graduated cum laude. Students must complete 40 semester credit hours of work at Lansing Community College to qualify for honors.
To graduate from Lansing Community College with an associate degree, a student must meet the following institutional requirements:
1. Complete a course of study approved by the College.
2. Maintain a minimum grade point average of 2.0.
3. Earn toward graduation at least 20 semester credits in attendance at Lansing Community College.
4. File an application for graduation with the Office of the Registrar one semester preceding the semester of graduation.
5. Complete a course in political science, POLS 120, American Political System, or POLS 121, State and Local Government, will satisfy this requirement for all degree programs. (NOTE: LABR 208, Labor Relations, will satisfy this requirement for certain programs only as indicated on specific curriculum guides.)
6. Satisfy all general and specific requirements of Lansing Community College including the fulfillment of all financial obligations.
7. Have the approval of the administration and the Board of Trustees.

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

Starting fall semester 1994, the College plans to begin implementation of a general education core as an institutional requirement for graduation with an associate degree.

CRITERIA FOR THE ASSOCIATE DEGREE IN ARTS AND THE ASSOCIATE DEGREE IN SCIENCES
In addition to meeting the institutional associate degree requirements previously outlined, students seeking an associate degree in arts or an associate degree in science must also meet the following requirements effective fall semester 1993:
A. The student is required to take a core of at least eight (8) credits in each of the following areas: Writing/English, Humanities, Science/Mathematics, and Social Science.
1. The eight required hours in the Writing/English area can be fulfilled by taking either WRIT 121 and ENGL 122, or WRIT 121 and WRIT 122. Those students permitted to waive WRIT 121 must elect a second course with any of the course codes below and with a number 200 or higher.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 420</td>
<td>SPCH 320</td>
</tr>
<tr>
<td>JAPN 100</td>
<td>JAPN 100</td>
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<tr>
<td>JPN 100</td>
<td>JPN 100</td>
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<td>JPN 101</td>
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<td>SPAN 100</td>
<td>SPAN 100</td>
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<td>SPAN 101</td>
<td>SPAN 101</td>
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</tbody>
</table>

2. The eight required hours in the Humanities area must include any course from Group A and any course from Group B.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 121, HIST 121, HUMS 213, HUMS 214, PHIL 211, or RELG 211.</td>
<td>Group B courses are: ENGL 212, HIST 212, HIST 214, HUMS 212, HUMS 214, PHIL 212 or RELG 212.</td>
</tr>
<tr>
<td>Group A courses are: ENGL 211, HIST 211, HUMS 212, HUMS 213, PHIL 211, or RELG 211.</td>
<td>It is recommended that students take a course from Group A before Group B.</td>
</tr>
</tbody>
</table>
In addition to meeting the institutional associate degree requirements previously outlined, students seeking an associate degree in applied arts or an associate degree in applied science must also complete course requirements of specific programs for specialized areas of study as presented in the curricular guide for each degree program.

## CRITERIA FOR THE ASSOCIATE DEGREE IN BUSINESS

In addition to meeting the institutional associate degree requirements previously outlined, students seeking an associate degree in business must complete the requirements of specific programs within an area of study as presented in the curricular guide for each degree program.

## CRITERIA FOR THE GENERAL ASSOCIATE DEGREE

Students seeking a general associate degree must fulfill the institutional associate degree requirements previously outlined. Credits earned from any associate degree course offered by Lansing Community College will apply toward the general education credit requirement for this degree. To fulfill the institutional general education requirement, students must complete POLS 120, American Political System, or POLS 121, State and Local Government.

## HOW TO APPLY FOR THE ASSOCIATE DEGREE OR CERTIFICATE OF ACHIEVEMENT

The student submits his/her application for degree/certificate to the Office of the Registrar. It is important that the student attach copies of any authorized course substitutions or waivers and a copy of the curricular guide he/she has course substitutions or waivers and a copy of the curricular guide he/she has been following to the application. Transition students must also attach a copy of the Curriculum Completion Plan form to the application. Copies of the student's academic record, current semester schedule, and curricular guide (if not submitted, the student) are attached to the application.

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

2. If no requirements remain after the initial review, the application will be sent to the appropriate departmental chairperson and divisional dean for approval. When the application is returned to the Office of the Registrar, the student is sent a letter indicating he/she must successfully complete the current semester.

The application is held on file until the current semester grades are recorded and successful completion of the current semester is verified. Applications for students who do not successfully complete the semester are recycled and are held on file until all requirements are met for up to one year. It is important that a student make application for his/her degree at least one semester in advance of graduation. The procedure one semester to the semester, an official copy of the student's LCC transcript, noting the degree and date of completion, will be sent to the student. This transcript is official notification that all course requirements have been met. Diplomas are mailed within two months after the last day of the semester.

### SEMESTER TRANSITION PROGRAM COMPLETION INFORMATION

Students who first enroll at Lansing Community College for fall semester 1993 and thereafter will be considered semester students, not transition students. The new semester system requirements will apply to them, and they must follow semester curricular guides effective fall 1993.

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

**PLEASE NOTE:** All Curriculum Completion Plans must be approved by departmental chairpersons.

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

#### Quarter Option

The Quarter Option is a Curriculum Completion Plan for completing all unfilled quarter system requirements with semester credits and courses. Effective fall 1993, transition students with fewer than 45 earned quarter credits may take a full semester to complete a specific degree—or less than 50 percent earned quarter credits toward a certificate—must choose the Semester Option.

#### Semester Option

The Semester Option is a Curriculum Completion Plan in which all course quarters and credits will be applied to semester system requirements. All transition students are eligible to choose the Semester Option. Beginning with fall 1993, curriculum guides will be valid for a period of five years. The inclusive dates will be printed on each guide. All quarter-based curricular guides expire at the end of summer semester 1997.

### TRANSFER INFORMATION

Students planning to transfer to another institution should be aware that universities and colleges differ widely in the courses they accept for transfer. A student intending to transfer should follow the transfer curriculum guidelines of the institution to which he/she intends to enroll. Transfer guides are not LCC degree institution to which he/she intends to enroll. Transfer guides are not LCC curriculum guides, however, a student may receive an LCC degree for completing a specific transfer guide if additional LCC requirements are also met. In order to achieve maximum transferability of courses, students should consult with an academic advisor.

### MACRAO Transfer Agreement

In 1973 the Michigan Association of Collegiate Registrars and Admissions Officers proposed the MACRAO Transfer Agreement. The MACRAO Transfer Agreement was created to simplify the transfer of students from one institution to another. The agreement stipulates that 30 semester credit hours of 100-level and above, comparable, general course work will be granted smooth transferability to participating universities. These credits will be applied toward a student's general education requirements. Completion of requirements for the general education portion of the agreement have been completed by students.

MACRAO Transfer Agreement does not necessarily mean that a student has the requirements for the specific Lansing Community College Associate Degree.

The basic two-year requirements are:

- English Composition: 6 semester hrs min
- Natural Science: 8 semester hrs min
- Social Science: 8 semester hrs min
- Humanities: 8 semester hrs min

1993-94 Catalog Lansing Community College
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.

I. English and Composition - (minimum of 6 semester credit hours)
Any one of the following combination of Writing and English courses:
WRIT 121 OR WRIT 121 OR WRIT 131 OR WRIT 131
ENG 122 OR WRIT 122 OR ENGL 122 OR WRIT 122
A student who is permitted to waive WRIT 121 must elect a second course from the 200-level offerings in writing or English. Waiver of WRIT 121 should be printed on the student’s transcript.

II. Science and Mathematics - (minimum of 8 semester credit hours)
NSCI 121 & 122 or NSCI 131 & 132 or courses in at least two (2) subject areas, with a minimum of one laboratory science course. Highlighted courses indicate a laboratory course.
ANAT 145, 151, 152, 201
ASTR 201
BIOL 121, 127, 128, 201, 202, 250, 260, 270
CHEM 151, 161, 152, 162, 152, 162, 215, 227, 251, 262, 272
GEOL 200, 201, 222, 230
MATH 121, 122, 125, 130, 141, 151, 153, 201, 253, 254, 260
METR 220
MICR 203 & 204
NSCI 121, 122, 131, 132
OCNL 225
PHGY 202
PHYS 151, 201, 202, 210, 222, 225, 226
STAT 170, 215

III. Social Science - (minimum of 6 semester credit hours)
Courses must be taken in more than one subject area.
ANTH 270, 273, 276
ECNM 120, 130
GEOG 121, 121, 200, 202, 203
POLS 121, 121, 130, 200, 250, 270, 280
PSYC 175, 200, 202, 203, 204, 205, 210, 211, 221, 222, 240, 250
SOCI 120, 254, 255, 260, 280, 289
One course may be selected from:
GERO 100, SOWK 101

IV. Humanities - (minimum of 6 semester credit hours)
HUMS 219 and 214 or courses in at least two of the following areas:
Art History: HUMS 121, 211, 212, 220
Foreign Language: FREN 101, 102, 201, 202; GERMAN 101, 102, 201, 202; JAPAN 101, 102, 201, 202
History: ECON 211; HIST 150, 210, 211, 212, 214, 220, 230, 290
Humanities: HUMS 215, 220
Literature: ENGL 201, 202, 203, 201, 211, 220, 240, 245, 250, 260, 265, 266, 270, 290; HUMS 160
Performing Arts: MUSIC 199, 240, 241, 245, 248, 249, 251; THEA 210
Philosophy/Religion: PHIL 115, 152, 153, 211, 212, 290; RELG 211, 212, 241, 242, 250

NOTE
1. POLS 120 or POLS 121 is required for an associate degree from LCC. See the College catalog for additional LCC degree requirements.
2. Students are advised to also review specific transfer curricular guides e.g. some transfer institutions may require both a biological and physical science to satisfy the requirements for the degree.

For further information and advising, contact a Lansing Community College or a counselor in either room 105 of the Arts & Sciences Bldg., phone (517) 483-1191 or room 208 of the Student Personnel Services Bldg., phone (517) 483-1157.

The following four-year institutions are signatory to the MACRAO Transfer Agreement:
*Adrian College
*Algon College
*Alma College
*Aquinas College
*Baker College
*Calvin College
*Central Michigan University
*Clare College
*Davenport College
*Detroit College of Business
*Eastern Michigan University
* Ferris State University
*GM Engineering and Management Institute
*Grand Valley State University
*Hope College
*Kalamazoo College
*Lake Superior State University
*Lawrence Technological University
*Madonna College
*Michigan Christian College
*Michigan State University
*Michigan Technological University
*Muskegon Business College
*Northern Michigan University
Northwood Institute
*Oakland University
* Olivet College
* Saginaw Valley State University
* St. Mary’s College
* Siena Heights College
* Spring Arbor College
* Western Michigan University
* Some limitations may apply. Check with individual college/university.

REGULATION FOR THE GRANTING OF ADDITIONAL ASSOCIATE DEGREES
Any student who has received an associate degree from Lansing Community College or any other accredited community college may be awarded a second associate degree subject to the following stipulations:
1. For each additional associate degree, a minimum of 10 semester credit hours must be completed at LCC in the division in which the degree is sought, nonrepetitive of previously earned credits.
2. All requirements for an associate degree in either arts, applied arts, business, science, or applied science must be met.
3. No additional degree will be granted in the same program or curriculum in which the first degree was earned.
4. An additional degree must be within a specific program or curriculum.
5. Exceptions to the above should be appealed to the office of the respective dean.

REGULATION FOR GRANTING AN ASSOCIATE DEGREE WHEN THE STUDENT HAS AN EARNED BACHELOR'S DEGREE
A student who has earned a bachelor's degree from an accredited American college or university which has a general education requirement may be awarded an associate degree at Lansing Community College subject to the following requirements:
1. For each associate degree, a minimum of 10 semester credit hours must be completed at Lansing Community College in the division in which the associate degree is sought. The Lansing Community College cumulative grade point average must be at or above a 2.0 level.
2. All requirements for an associate degree in either arts, applied arts, business, science, or applied science must be met.
3. The College's requirement of completing a political science course is 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 in the division in which the associate degree is sought.

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

STUDENT RESPONSIBILITIES
Attendance
Students are expected to attend all sessions of each course in which they are enrolled. Failure to do so may result in academic penalty or withdrawal from the class. Absence for any reason, including illness or late registration, is not excused. Students are required to make up work missed from classes in the same course. Students are responsible to contact the instructor when they are unable to attend class.

Examinations
Students are required to take all 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.
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 enrolling in a class.

Student Evaluation of Instructional Quality

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

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

Conduct

The College prohibits acts which cannot be tolerated because they seriously interfere with the basic purposes, necessities and processes of the academic community and the College, or because they deny the essential rights of other members of that community of the College.

Laws

Students shall obey the laws enacted by federal, state and local governments. It is appropriate that the students be aware of Act 26 of the Public Acts of 1970: “Sec. 1. A person is guilty of a misdemeanor, punishable by a fine of not more than $500.00, or by incarceration in the county jail for not more than 30 days, or both:
1. When the chief administrative officer of a publicly owned and operated institution of higher education, or his/her designee, notifies the person that he/she is such an officer or designee and that the person is in violation of the properly promulgated rules of the institution; and
2. When the person is in fact in violation of such rules; and
3. When, thereafter, such officer or designee directs the person to vacate the premises, building or other structure of the institution; and
4. When the person thereafter willfully remains in or on such premises, building or other structure; and
5. When, in so remaining therein or thereon, the person constitutes
   a. a clear and substantial risk of physical harm or injury to other persons or of damage to or destruction of the property of the institution, or
   b. an unreasonable prevention or disruption of the customary and lawful functions of the institution, by occupying space necessary therefore or by use of force or by threat of force.
Sec. 2. A person is guilty of a misdemeanor, punishable by a fine of not less than $200.00 and not more than $1,000.00, or by incarceration in the county jail for not more than 90 days, or both, who enters on the premises, building or other structure of a publicly owned and operated institution of higher education, with the intention to, and therein or thereon does in fact, constitute (a) a clear and substantial risk of physical harm or injury to other persons or of damage to or destruction of the property of the institution, or (b) an unreasonable prevention or disruption of the customary and lawful function of the institution, by occupying space necessary therefore or by use of force or by threat of force.
Sec. 3. This act shall take effect August 1, 1970.”

GENERAL RULES AND REGULATIONS

Academic Honesty

Each student is expected to be honest in his/her work. Dishonesty in assignments, examinations, or other academic work is considered an extremely serious offense by the faculty and students and the student is subject to disciplinary action. 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. In addition to imposing internal disciplinary action for such offenses, the College reserves the right to pursue legal action when it is deemed appropriate.

Assaults

Assault and/or battery on College property is prohibited. For the purpose of this regulation, assault is defined as an attempt or offer, with force and violence, to do corporal harm to another, with apparent present means of carrying out the attempt. Battery is an injury which results from an assault. Battery is an injury, regardless of intent, actually done to a person by another in an angry, royal, rude or insolent manner.

Assembly

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

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 alcohol, and (2) to articulate for students, and in conformance with the Board of Trustees policies 4416 and 7820, as well as the Drug-Free Schools and Communities Act Amendments of 1989 (20 U.S.C. 3171, et seq.), the following regulations are effective immediately:

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

Fighting
Fighting on College property is prohibited except for a boxing, sparring or wrestling match, contest, or exhibition 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, bookstore accounts, driving or parking penalties, etc., will be subject to disciplinary action if such accounts are not paid when due. In particular, it should be noted that if any accounts are outstanding at the end of an academic semester, the publication of the student’s grade report and/or official transcripts will be delayed and the student will not be permitted to register for a succeeding semester until such accounts are paid.

Games and Recreational Activities
Gambling in any form is prohibited at all times on College property. Games of any kind may only be played in the recreational or athletic facilities which have been designated to be used 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 involuntary audiences.

Identification Cards
All Lansing Community College students are issued an identification card. Students are expected to show their I.D. card whenever they check out books at the library, cash checks on campus, vote in student elections, etc., or when they are requested by a member of the faculty or staff of the College. Misuse of College identification to obtain privileges to which the student or to which others are not entitled under existing regulations is a College offense.

Meetings
"American parliamentary law is built upon the principle that rights must be respected: rights of the majority, of the minority, of individuals, of absentees, and rights of all these together." Therefore, Robert’s Rules of Order (Revised), will be followed in any meetings held upon the College campus.

Obstructing and Jostling
The following acts are prohibited on College property: Obstruction of or threatening to obstruct, without express permission from an administrative official of the College, any street, sidewalk, driveway, doorway, escalator, building, amphitheater, and other College property by impeding or threatening to impede the free and uninterrupted passage of vehicles or individuals, or interfering in any way with the free and uninterrupted use of College property, jostling or roughly crowding persons in any of the above-mentioned locations.

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 administrative officials of the College. Approval of College clubs and organizations must be in accordance with the Student Government Bylaws and Constitution.

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
A student is guilty of plagiarism when he/she fails to give credit for any ideas or material taken from another for either written or oral presentation. The offering of materials assembled or collected by others in the form of projects or collections without acknowledgement also is considered plagiarism. Plagiarism is considered by the faculty and students as an extremely serious offense for which the student may be subject to disciplinary action.


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.

Smoking
In compliance with the Michigan Clean Indoor Act, P.A. 198 of 1988, and in the interest of providing a safe and healthy environment for the College’s students, employees, and visitors, smoking will not be permitted in Lansing Community College facilities.

Vandalism
Property of the College, as well as that of individuals, should be respected. Theft of any kind, the destruction or mutilation of media resources, materials, or the equipment, or buildings or grounds of the College is inconsistent with the objectives of the College and good citizenship, and therefore subject to 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
Explosives, firecrackers, firearms, and devices intended to be used as weapons are not permitted on College property. Provided, however, that the foregoing shall not prohibit fencing foils and other athletic equipment intended for such use, nor shall it apply to persons having concealed weapons permits and duly constituted police officers who are authorized by law to carry weapons.

Poster Regulations
Lansing Community College is continually sensitive to the fact that there is a need for our 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, provide for the general safety and welfare of all members of the College community, and which preclude disruption of the normal functions of the College.

The following statements are designed to regulate the use of posters within the College facilities while providing students, College personnel, and College properties reasonable protection from commercial exploitation and court suits. While the courts have found 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, a brochure, 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. All posters should be in English, or when in another language, a literal English translation should be supplied with each poster copy. When a foreign language poster is used, its complete English translation should be:
   a. Clearly printed on the same poster and in the same size letters as the letters used in the original foreign language poster, or
   b. Attached to each copy of the foreign language poster, clearly printed, and in the same size letters as the letters of the original foreign language poster. The English translation must remain with the poster for the duration of its posting.
3. Each poster is required to have in the lower left-hand corner, its posting date (month, day, and year) and in the lower right-hand corner, its date (month, date, and year) to be removed or in the 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.
Regulations for Use of Student Literature Table

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

The following statements are designed to facilitate student distribution of literature within the College facilities, while providing students and College personnel and property reasonable protection from commercial exploitation and legal harassment. 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 logistical instructional mission of the College to serve the citizens of the College community. The following 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 College buildings:
   a. In the entry lobby outside the second floor cafeteria of the Arts and Sciences Building.
   b. In the Washington Avenue Mall lobby between the Health Physical Education Building and the Apeldale 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 manner based on the use of the area and regulations regarding fire safety and student welfare.

2. Only registered students and College-recognized student clubs and organizations shall have access to the student literature tables. As in the past, non-students who wish to use college facilities must gain permission by following procedures established for this purpose through the appropriate instructional offices or the Office of the Vice President of the College.

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 regular hours of college operation.

4. While no prior College approval of the materials to be distributed is required, registered students and College-recognized clubs and organizations are required to register for the use of the student literature tables with the Student Life Office. Registration is 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 group requests for 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.

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

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.

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.

Students 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 placed upon any individual nor shall there be any obstructions created in the path of the general flow of traffic.

Individual students or recognized student clubs and organizations may collect funds for worthy causes, such as Muscular Dystrophy, Blood Donations, or College-sponsored activities. The College shall not be considered a solicitation of funds or business, nor shall individual students solicit funds for personal gain.

The College has the right and responsibility to halve the distribution of literature if it believes it to be in the best interest of the College and individuals who are not affiliated with the College. Such groups may place their literature on this kiosk without seeking prior approval from any College office, and the College disclaims any and all responsibility for items posted.
2. Submission to or rejection of such conduct or communication by an individual is used as a factor in decisions affecting such individuals employment, public accommodations or public services, education or housing.

3. Such conduct or communication has the purpose or effect of substantially interfering with an individual's employment, public accommodations or public services, education or housing environment."

For the purpose of the above regulations the College interprets the unwelcome to mean:

1. Conduct or communication which a reasonable person in a similar circumstance would consider unwelcome.

2. Conduct or communication which continues after notice is given that the conduct or communication is unwelcome.

### Discrimination

Lansing Community College affirms its commitment to the practice of no discrimination on the basis of race, color, religion, sex, national origin, age, height, weight, marital status, handicap, or sexual orientation. This commitment has evolved from efforts to comply with several laws and public acts that pertain to the area of no discrimination. Notable of these acts and laws are the following:

1. Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin.
2. Title IX of the Educational Amendment of 1972 prohibits discrimination on the basis of sex.
3. Section 504 of the Rehabilitation Act of 1973 prohibits discrimination
   on the basis of handicap.

### Sexual Harassment/Discrimination Complaint Process

The guidelines/procedures below apply to LCC students who may desire to file a complaint regarding sexual harassment/discrimination. The investigation of all sexual harassment/discrimination complaints will be handled through the Affirmative Action/Equal Employment Opportunity (AA/EOO) Office. Sexual harassment/discrimination is unlawful and all complaints of sexual harassment/discrimination must be reported.

#### I. Responsibility to Report

Prompt reporting of all complaints is strongly urged since it is often difficult to trace the facts of an incident or incidents long after they have occurred. It is recommended that complaints be filed within sixty (60) calendar days of the alleged incident. All complaints will be investigated. Individuals making a complaint or taking part in the investigation of a complaint will not be subject to retaliation.

#### II. Filing a Complaint

Students who feel they are being sexually harassed or discriminated against should contact the AA/EOO Office, (517) 483-1858. In addition, students filing a complaint will be asked to complete a sexual harassment/discrimination complaint form. (Sexual harassment/discrimination complaint forms are available in the following offices: Personnel Department, offices of Divisional Deans, and the Affirmative Action Office.)

#### III. Investigation Procedures

A. Investigator(s)

After receiving a complaint the AA/EOO Officer will designate a specially trained person or persons to investigate the alleged complaint. Besides investigating complaints of sexual harassment/discrimination, this investigation team (or individual) may make recommendations for resolution, corrective action, and/or disciplinary action when designated by the AA/EOO Officer.

B. Timetable

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

C. Complainant

The AA/EOO Officer will contact the complainant and inform him/her when the investigation will occur. The complainant may be asked to submit additional information, if necessary, for the investigation to continue.

D. Notification

The AA/EOO Officer will inform the alleged harasser/discriminator of the complaint as soon as is practicable or necessary. The results of the investigation will be revealed to the alleged harasser/discriminator upon the completion of the investigation.

E. Confidentiality

At each step of this procedure, the College will take appropriate action to protect the privacy of individuals involved in the complaint. Both in fact-finding and in the final disposition of the complaint, efforts will be made to maintain confidentiality. During the investigation stage, the College may have to contact witnesses or other individuals involved. This will not be considered a breach of confidentiality.
IV. Resolution

Based on the results of the investigation, appropriate action will be taken by the College. Complaints may be dismissed or resolution could include disciplinary action up to and including dismissal. If through an investigation of sexual harassment/discrimination other wrongdoings are found, these issues will be dealt with separately from the sexual harassment/discrimination complaint.

Regulation Revisions and Additions

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

DUE PROCESS

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

When a student is accused of violating general rules and regulations of the College, the Academic Standing Policies, the procedures described below will be followed:

1. The student will be notified by certified letter that an alleged violation has occurred.
2. A student may admit the alleged violation and request, in writing, that the administrative officer take whatever action seems necessary.
3. A student may admit the alleged violation and request a hearing before the Judicial Board regarding the discipline imposed.
4. The student may deny the alleged violation, in which case the administrative officer shall refer him/her to the Judicial Board.
5. Prior to the 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, detailed statement of the charges so that the student may prepare his/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 Board's attention.
6. The student shall be entitled to appear in person and present his/her defense to the Judicial Board and may call witnesses in his/her behalf. The student may also elect not to appear and have the Judicial Board decide. Should he/she elect not to appear, the hearing shall be held in his/her absence.
7. The student shall be entitled to be accompanied by a person of his/her choice. If this person is in the form of legal counsel, the student must notify the Office of the Dean of the Student and Academic Support Division at least ten (10) days prior to the scheduled hearing date.
8. The student or his/her representative may be allowed to ask questions of the Judicial Board or any witnesses.
9. The student shall be entitled to an expeditious hearing of his/her case.
10. The student shall be entitled to an explanation of the reasons for any decision rendered against him/her.

A student who wishes to contest the decision of the Judicial Board may request that the President of the College (or his/her designee) review the decision of the Judicial Board. The student must request this review within ten (10) scheduled class days (excluding Saturday and Sunday) of the notification of the Judicial Board's decision. (Decisions rendered by the President (or his/her designee) will be final. A student who is not satisfied with a decision at this level has recourse to civil court action.

The standard of proof to be followed by the Judicial Board of Lansing Community College is the standard of "preponderance of evidence." Decisions rendered by the Judicial Board will be made by a simple majority vote of the total membership of the Judicial Board. In addition, the Judicial Board shall be empowered to make recommendations based on decisions rendered.

Membership of the Judicial Board

The Judicial Board will consist of the following members:

1. The Dean of the Student and Academic Support Division or his/her designee (NOTE: This member will serve as chairperson. However, when the Judicial Board is hearing an appeal based on a disciplinary decision of the Office of the Dean of the Student and Academic Support Division, the Dean of the Student and Academic Support Division will relinquish the chair, and a temporary chairperson will be elected by the remaining members of the Judicial Board from the remaining members of the Judicial Board.)
2. One College administrator appointed by the Dean of the Student and Academic Support Division.
3. Two students appointed by the President of the Student Government from the student body with consent of the Student Government, with one alternate 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 concerned student is enrolled or matriculating, with one alternate faculty member appointed in the same way, to serve in the absence of any faculty member.

Disciplinary Action

Students violating the general rules and regulations of the College and students committing academic offenses, other than those involving Academic Standing Policies, shall be subject to disciplinary action which is appropriate to the nature of the offense and which may take into account the student's previous conduct. Disciplinary action may be imposed by the Dean of the Student and Academic Support Division (or his/her designee) or, in the case of academic offenses, by the classroom instructor or divisional dean (or his/her designee). Examples of such disciplinary action include the following:

1. Reprimand;
2. Probation;
3. Restrictions on activities or privileges;
4. Requirements of restitution;
5. Denial or revocation of a College honor or degree;
6. Suspension;
7.Dismissal.

The student may appeal any decision regarding disciplinary action as described below.

Student Appeals

The Judicial Board will hear cases referred to it by administrative officers of the College or by individual students through the established lines of appeal. An appeal is defined as a review of a previous decision and the process used in reaching that decision. Before using the formal appeal process, students are encouraged to first meet with faculty members to attempt to resolve issues in an informal manner.

The line of appeal used will depend upon the type of case involved. In all cases, students are required to state their appeal (or complaint) in writing at the time they begin the formal appeal process.

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

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

   a. The Dean of the Student and Academic Support Division (or his/her designee);
   b. The Judicial Board of the College;
   c. The President (or his/her designee).

Note: A student will have 10 scheduled class days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

2. Student Appeal of a Violation of Academic Rules and Regulations or of Academic Disciplinary Action

In appealing an academic charge based on a violation of the academic rules and regulations (plagiarism or cheating, for example), and in appealing academic disciplinary action (loss of credit, for example), the student shall use the following line of appeal:

   a. The faculty member involved (when appropriate);
   b. The dean of the division involved (or his/her designee) in consultation with the department chair;
   c. The Judicial Board of the College;
   d. The President (or his/her designee).

In cases involving an academic charge or academic disciplinary action, the faculty members serving on the Judicial Board will be faculty members from the division which offers the class where the academic charge or disciplinary action is being appealed.

Note: A student will have 10 scheduled class days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

3. Student Grade Appeals

When a student wishes to appeal a grade, he/she must do so by the end of the sixth week of the following semester or summer session. The line of appeal shall be as follows:

   a. The faculty member involved (when appropriate);
   b. The dean of the division involved (or his/her designee) in consultation with the department chair;
   c. The Judicial Board of the College;
   d. The President (or his/her designee).

When cases involving student grade appeals are heard by the Judicial Board, the faculty membership on the Judicial Board will be two faculty members from the division which offers the class where the grade is being appealed.
Note: A student will have 10 scheduled class days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

4. Student Complaints
When a student wishes to lodge a complaint against an instructor for alleged mistreatment of students, except in cases of sexual harassment/discrimination (found in this catalog under "Sexual Harassment/Discrimination"), the line of appeal in the complaint process shall be as follows:

a. The faculty member involved (when appropriate);
b. The dean of the division involved (or his/her designee) in consultation with the department chair;
c. The Judicial Board of the College;
d. The President (or his/her designee).

When cases involving student complaints are heard by the Judicial Board, the faculty membership on the Judicial Board shall be two faculty members from the division which offers the class where the complaint for alleged mistreatment is being lodged.

Note: A student will have 10 scheduled class days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

5. Student Appeal of Administrative Withdrawal
Whenever the Office of the Registrar receives the recommendation for an administrative withdrawal, the office of the Registrar will notify the student in writing that he/she is being administratively withdrawn. The lines of appeal for administrative withdrawal decisions are as follows:

Line of Appeal of Administrative Withdrawal for Non-Attendance and for Lack of Course Prerequisites

a. The instructor (if appropriate);
b. The dean of the division involved (or his/her designee) in consultation with the departmental chair;
c. Judicial Board of the College;
d. President (or his/her designee).

Line of Appeal of Administrative Withdrawal for Inappropriate Classroom Behavior

a. The dean of the division involved (or his/her designee) in consultation with the departmental chair;
b. Judicial Board of the College;
c. President (or his/her designee).

If a student appeals an administrative withdrawal to the dean of the appropriate division (as noted above in the lines of appeal), the student will receive written notification of the time and place of the appeal. If the student does not attend the appeal conference, the dean will review the appeal in the student's absence. The dean will notify the student in writing of the recommendation of the review and of the reasons for the recommendation. The dean will forward a copy of the student's written notification to the Office of the Registrar for disposition.

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

FACULTY RESPONSIBILITIES

The primary responsibility of instructional staff is teaching effectively. Such effective teaching may occur in the classroom, laboratory, office, or in any other instructional setting. This responsibility is reflected by an instructor who:

A. Is articulate and enthusiastic about his/her field and establishes a positive, stimulating learning atmosphere;
B. Prepares for each class; organizes course concepts and presents them clearly; exhibits comprehensive knowledge of the subject; applies skills appropriate to course content; makes appropriate and timely use of student and instructional support services;
C. Respects students as individuals; recognizes student learning styles and manages student learning accordingly; adapts course material to student learning mode and rate;
D. Leads discussions when appropriate and provides presentations which represent various sides of a given issue;
E. Informs students early in the class as to what is expected of them through a departmentally approved syllabus, course outlines, grading standards, texts, and other materials; provides appropriate classroom materials and assigns students in maintaining them; provides students with scheduled instructional hours;
F. Evaluates students fairly and objectively, constructs and administers examinations that are valid and reliable indicators of student learning, maintains clear and thorough records of student progress, and keeps students informed throughout the course;
G. Encourages intelligent, independent thought by students, where appropriate; and
H. Uses instructional media, learning materials, and equipment effectively.

The complementary responsibilities of instructional staff are to assist students through scheduled office hours and on other occasions, including being an informed adviser on academic and career planning by:

A. Providing assistance to students on an individual basis;
B. Being available to consult with students during regularly scheduled office hours and informing students about the availability of these hours;
C. Knowing curriculum/program requirements and career opportunities in one's field of expertise or making appropriate referrals for academic advising; being able to advise students in one's own program area, where appropriate making referrals for counseling, placement, and for information regarding educational alternatives with the College and at other institutions.

*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.

SPECIAL PROGRAMS AND SERVICES

Lansing Community College has many programs and services for students, including the following: Honors Programs, International Programs, Sister College Agreement with Atlanta University Center, Reserve Officer Training Corps, Foundation, New Horizons for Minorties, Women's Resource Center, Center for Aging Education, Office of Handicapper Student Services, Physical Education and Athletics, Counseling, Orientation, Testing, College and High School Articulation, Academic Advising, Tutoring, Educational and Vocational Information, Financial Aid, Work Study, Employment Placement and Student Activities. For more information see the Student Guide Book.
Degree
& Certificate Programs
DEGREE AND CERTIFICATE PROGRAMS

The following is a list of degree and certificate programs offered by Lansing Community College. Copies of curriculum guides for each of these programs are available in department offices, file drawers around campus, and the counseling office. For additional information about these programs a student should contact the counseling office or an academic advisor.

Programs Leading to an Associate Degree

Accounting
  Associate Degree Business
Accounting, C.P.A. Exam Preparation
  Associate Degree Business
Administrative Assistant
  Associate Degree Business
African American History Major
  Associate Degree Arts
American Studies Major
  Associate Degree Arts
Architectural Technology
  Associate Degree Applied Science
Architectural Technology/Computer Graphics
  Associate Degree Applied Science
Auto Body Repair
  Associate Degree Applied Science
Automotive Maintenance
  Associate Degree Applied Science
Avionics
  Associate Degree Applied Science
Banking Management, AIB Diploma Program
  Associate Degree Business
Biology
  Associate Degree Science
Building Maintenance
  Associate Degree Applied Science
Business Administration
  Associate Degree Business
CAD/CAM Engineering Technician
  Associate Degree Applied Science
Chemical Technology
  Associate Degree Science
Chemistry
  Associate Degree Science
Child Development/Early Childhood Education
  Associate Degree Arts
Civil Technology
  Associate Degree Applied Science
Communication Design
  Associate Degree Applied Arts
Computer Graphics Animation
  Associate Degree Applied Arts
Computer Graphics Commercial Art
  Associate Degree Applied Arts
Computer Operations Management
  Associate Degree Business
Computer Sales Specialist
  Associate Degree Business

Computer Science
  Associate Degree Science
Computer Security and Controls
  Associate Degree Business
Computerized Numerical Control Programmer
  Associate Degree Applied Science
Court and Conference Reporting
  Associate Degree Business
Credit Union Management
  Associate Degree Business
Criminal Justice, Corrections
  Associate Degree Business
Criminal Justice, Police Academy
  Associate Degree Business
Criminal Justice, Security Administration
  Associate Degree Business
Criminal Justice, Transfer
  Associate Degree Business
Dance Career
  Associate Degree Applied Arts
Dance Transfer
  Associate Degree Applied Arts
Data Processing
  Associate Degree Business
Dental Hygienist
  Associate Degree Business
Diesel Engine Technology
  Associate Degree Applied Science
Drafting and Design
  Associate Degree Applied Science
Drafting and Design, Body Design
  Associate Degree Applied Science
Drafting and Design, Chassis Design
  Associate Degree Applied Science
Electrical Technology
  Associate Degree Applied Science
Electronics Technology, Biomedical Option
  Associate Degree Applied Science
Electronics Technology, Communications Option
  Associate Degree Applied Science
Electronics Technology, Digital Option
  Associate Degree Applied Science
Emergency Medical Services
  Associate Degree Applied Science
English Major
  Associate Degree Arts
Executive Secretary
  Associate Degree Business
Field Sales and Marketing
  Associate Degree Business
Fine Art Foundation
  Associate Degree Applied Arts
Fire Science Technology
  Associate Degree Applied Science
Food Management Specialist
  Associate Degree Business
Foreign Language
  Associate Degree Arts
General, PreAccounting, Transfer
  Associate Degree Business
General PreEconomics Transfer
  Associate Degree Business
General Science, Associate in Science
  Associate Degree Science
Geographic Resource & Environmental Technology
  Associate Degree Applied Science
Geoscience
  Associate Degree Science
Gerontology
  Associate Degree Arts
Heating, Air Conditioning & Refrigeration
  Associate Degree Applied Science
History Major
  Associate Degree Arts
Horticulture
  Associate Degree Applied Science
Hotel/Motel Management Specialist
  Associate Degree Business
Human Services (General)
  Associate Degree Arts
Humanities Major
  Associate Degree Arts
Illustration
  Associate Degree Applied Arts
Industrial Automation
  Associate Degree Applied Science
Industrial Technology
  Associate Degree Applied Science
Information/Word Processing
  Associate Degree Business
Interior Design Assistant
  Associate Degree Applied Science
International Administrative Assistant
  Associate Degree Business
International Business
  Associate Degree Business
International Studies
  Associate Degree Arts
Landscape Architecture
  Associate Degree Applied Science
Legal Assistant
  Associate Degree Business
Legal Secretary
  Associate Degree Business
Liberal Arts
  Associate Degree Arts
Machine Maintenance
  Associate Degree Applied Science
Machinist Toolmaker
  Associate Degree Applied Science
Management General
  Associate Degree Business
Managerial Accounting
  Associate Degree Business
Marketing
  Associate Degree Business
Mathematics
  Associate Degree Science
Media Technology
  Associate Degree Applied Science
Medical Secretary/Transcriptionist
  Associate Degree Business
Microcomputer Systems
  Associate Degree Business
Molecular Biology
  Associate Degree Science
Music Commercial Performance
  Associate Degree Applied Arts
Music Transfer
  Associate Degree Applied Arts
Nursing, Second Year Career Ladder
  Associate Degree Applied Science
Personnel/Labor Relations
  Associate Degree Business
Philosophy and Religion Major
  Associate Degree Arts
Photographic Imaging
  Associate Degree Applied Science
Physics
  Associate Degree Science
PreBusiness Transfer
  Associate Degree Business
Programmer/Analyst
  Associate Degree Business
Property Valuation & Assessment Admin.
  Associate Degree Business
Psychology
  Associate Degree Arts
Quality Assurance
  Associate Degree Applied Science
Quality Management
  Associate Degree Applied Science
Radiation Therapy
  Associate Degree Applied Science
Radiologic Technology
  Associate Degree Applied Science
Real Estate
  Associate Degree Business
Records and Information Management
  Associate Degree Business
Residential Building
  Associate Degree Applied Science
Resource & Operations Management Systems
  Associate Degree Applied Science
Respiratory Therapist
  Associate Degree Applied Science
Secretarial/Word Processing in Technology
  Associate Degree Business
Sign Language Interpreter
  Associate Degree Arts
Social Science
  Associate Degree Arts
Speech Communication, Associate In Arts
  Associate Degree Arts
Substance Abuse
  Associate Degree Arts
Technology General
  Associate Degree Applied Science
Theatre, Acting Transfer
  Associate Degree Applied Arts
Theatre, Design/Directing Transfer
  Associate Degree Applied Arts
Theology, PreProfessional Major
  Associate Degree Arts
Tourism: Airline And Travel Agency Operations
  Associate Degree Business
Welding Technology
  Associate Degree Applied Science
Programs Leading to a Certificate of Achievement

Auto Body Repair
Automated Office Specialist
Automotive Technology
Banking Management, AIB Diploma Program
Basic Emergency Medical Technology
Building Maintenance
Child Development/Early Childhood Education
Computer Operator
Computer Repair Technician
Dance Teaching
Dental Assistant
Diagnostic Medical Sonography
Diesel Engine Technology
Drafting and Design
Field Sales and Marketing
Food Management Specialist
Gerontology
Heating & Air Conditioning
Hotel Motel Management Specialist
Industrial Technology
Information/Word Processing
Machine Repair
Magnetic Resonance Imaging
Management
Management, Advanced
Manual Communication Specialist, Certificate
Marketing
Medical Assistant
Microcomputer Systems
Millwright
Nursing, First Year Career Ladder
Office Support
Paramedic
Power Equipment Repair
Residential Building
Respiratory Therapy Technician
Sign Language Interpreter, Certificate
Stenographer
Substance Abuse
Surgical Technology
Tool and Die Maker
Welding Technology
HOW TO READ COURSE DESCRIPTIONS

Each course description has six (6) categories of information as follows:

1. Course code
2. Course title
3. Number of semester credit hours
4. Term prerequisites
5. Semester prerequisites
6. Course description

For example:

ANTH 276 Prehistoric Archeology
Term Prerequisite: SS 101/SA 200
Semester Prerequisite: SOCL 120

A general survey of archeology. Includes an overview of the history of the field and the basic theories and methods employed in the study of archeological cultures. Archeological sites and cultures are used as examples.

COURSE CODES USED IN DESCRIPTIONS

COURSE CODES USED IN DESCRIPTIONS

Courses are listed in course code order. The sequence is as follows:

ACCG Accounting
AERO Aerospace Studies
AHCC Allied Health Courses
ABIL American Institute of Banking, Lansing Area
ANAT Anatomy
ANTH Anthropology
ARCH Architecture
ARTS Art
ARTWS Art Seminars and Workshops
ASTR Astronomy
AUTO Automotive
AVAF Aviation Airframe Maintenance
AVCE Aviation Continuing Education
AVEL Aviation Electronics
AVFT Aviation Flight Training
AVGM Aviation General Maintenance
AVGS Aviation Ground School
AVIR Aviation Instrument Repair
AVPP Aviation Powerplant Maintenance
AVST Aviation Simulator Training
BGCS Business Development Seminars
BIOL Biology
BLDR Building Related
BLDT Building Trades
BUSN Business
CABS Computer Applications Using Business Software
CAOP Court and Conference Reporting
CAAD Computer Aided Drafting and Design
CFPP Certified Financial Planner Program
CHCE Continuing Health Careers
CHDV Child Development
CHIM Chemistry
CHIN Chinese
CHSE Community Health Services
CISB Computer Information Systems for Business
CIVL Civil Technology
CJCT Criminal Justice Continuing Training
CJJS Criminal Justice
CNCP Computerized Numerical Control Program
COMM Communication
COOP Cooperative Education
COPO Computer Office Applications
CPSC Computer Science
CUAI Credit Union Accounting and Insurance
CUMA Credit Union Management
DADB Dental Assistant/Dental Hygiene
DANC Dance
DAST Dental Assisting
DHYG Dental Hygiene
DNTS Dental Service Courses
DTDS Drafting and Design
ECNM Economics: Arts and Sciences
ECOB Economics: Business
EDUC Education
ELCT Electronics Technology
ELTE Electrical Technology
EMSA Emergency Medical Services
EMSB Emergency Medical Services Seminars
ENEA Emergency Medical Technology
ENGL English
ENRI Enrichment
ESIL English as a Second Language
ESLT English as a Second Language: Technical
FIRE Fire Science
FREN French
GEOG Geography
GEOG Geography
GEOI Geology
GERO Gerontology
GRET Geographical Resource and Environmental Technology
GRMN German
HFCHE Health, Fitness, and Caridoc
HFWE Health, Fitness, and Wellness
HIST History
HMFS Hotel/Motel and Food Service Operations
HONR Honors
HORT Horticulture
HSAH E.I.S.D. Allied Health
HSAI E.I.S.D. Architecture
HSAE E.I.S.D. Auto Body
HSAM E.I.S.D. Auto Mechanics
HSBK E.I.S.D. Banking
HSCA E.I.S.D. Commercial Art
HSCS E.I.S.D. Computer Information Systems
HSDE E.I.S.D. Drafting
HSEC E.I.S.D. Electronics Technology
HSVF E.I.S.D. Hotel and Food Service Operations
HSIA E.I.S.D. Industrial Automation
HSMK E.I.S.D. Marketing
HSMT E.I.S.D. Machine Trades
HSDT E.I.S.D. Welding Trades
HUMS Humanities
HUSE Human Services
HVAC Heating, Ventilating, and Air Conditioning
IASM Industrial Automation Seminars
IDMS Diagnostic Medical Sonography
IMAG Photography Technology
IMRI Magnetic Resonance Imaging
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<th>Code</th>
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<td>RSEM</td>
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<td>Surgical Technology</td>
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<td>TRVL</td>
<td>Tourism: Airline and Travel Agency Operations</td>
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<td>USMT</td>
<td>U.S. Military Training</td>
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<td>VCLL</td>
<td>Vocabulary Improvement</td>
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<td>WELD</td>
<td>Welding Technology</td>
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<td>WRIT</td>
<td>Writing</td>
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ACCG 100 Practical Accounting for Non-Majors
Term Prerequisite: None
Semester Prerequisite: None
Given a student's need to learn how to prepare basic financial statements and perform other bookkeeping procedures, such as journalizing and posting economic information, and preparing trial balances and payroll, students will be able to accomplish these tasks according to generally accepted accounting principles.

ACCG 101 Accounting Information for Management
Term Prerequisite: None
Semester Prerequisite: None
Given an entity's financial information, such as an income statement or balance sheet, the student will be able to use this information for analysis, budgeting, and decision-making according to industry guidelines.

ACCG 140 Individual Income Taxes
Term Prerequisite: None
Semester Prerequisite: None
Given an individual's transactions for the year, such as income and expense items, students will be able to complete an individual income tax return 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.

ACCG 210 Principles of Accounting I
Term Prerequisite: MTH 012/Equivalent
Semester Prerequisite: MATH 060/Equivalent
Given an entity's financial information, such as a list of daily transactions, the student will be able to create income statements and balance sheets according to generally accepted accounting principles. This class introduces basic concepts of accounting, using a balance of theory and practice.

ACCG 211 Principles of Accounting II
Term Prerequisite: MTH 102/Equivalent, 2.0 in ACC 210
Semester Prerequisite: MATH 112/Equivalent, 2.0 in ACC 210
This is the second course in the two-semester introduction to accounting sequence. After completing the course students will be able to record transactions and prepare statements for manufacturing operations, prepare statement of cash flows, prepare budgets and other managerial reports, and do capital budgeting and short term decision-making.

ACCG 220 Intermediate Accounting I
Term Prerequisite: 2.0 in ACC 212
Semester Prerequisite: 2.0 in ACC 211
This course covers the more complex theoretical and practical aspects of accounting for cash, receivables, inventories, plant assets, intangibles, and natural resources. In addition, this course reviews the concepts of financial accounting which were covered in the Principles of Accounting courses.

ACCG 221 Intermediate Accounting II
Term Prerequisite: 2.0 in ACC 221
Semester Prerequisite: 2.0 in ACC 220
This course covers the more complex theoretical and practical aspects of accounting for investments, current liabilities and contingencies, long-term liabilities, leases, pensions, corporate income taxes, contributed capital, retained earnings, changes in estimates, accounting principle changes, error correction, statement of cash-flow, earnings per share, price-level changes, and financial statements analysis.

ACCG 230 Cost Accounting
Term Prerequisite: ACC 220, ACC 260
Semester Prerequisite: 2.0 in ACC 211, ACC 260
This course develops the more complex aspects of break-even analysis, job and process costing, standards and budgets, capital budgets, and material management. Lotus and DBASE applications are stressed. Also, this course reviews the concepts of cost accounting which were covered in Principles of Accounting II.

ACCG 231 Managerial Accounting
Term Prerequisite: 2.0 in ACC 230
Semester Prerequisite: 2.0 in ACC 230
This course covers the more complex control and managerial aspects of information gathering, relevancy, and decision-making in the areas of pricing, profitability, cost allocation, uncertainty, variance investigation, decentralization, executive performance measurement and strategic control systems.

ACCG 240 Federal Income Tax I
Term Prerequisite: 2.0 in ACC 212
Semester Prerequisite: 2.0 in ACC 211
This is the first of two semester sequence covering Federal Income Tax Law. After completing this course students will be able to complete a Federal Individual Income Tax return. Students will understand the Federal Laws governing the income an individual must report and allowable expenses and credits.

ACCG 241 Federal Income Tax II
Term Prerequisite: ACC 240
Semester Prerequisite: ACC 240
This is the second of two semester classes covering Federal Income Taxes. After completing this course students will be able to compute a Federal Corporate Income Tax return. They will understand and apply the underlying laws governing taxation of corporations, partnerships, and tax-exempt entities.

ACCG 245 Accounting Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This internship provides the student with on-the-job experience in the accounting field. It requires 160 hours of work experience.

ACCG 250 Advanced Accounting
Term Prerequisite: 2.0 in ACC 222
Semester Prerequisite: 2.0 in ACC 221/Departmental Approval
Given a student's need to acquire more in-depth knowledge of accounting topics, such as consolidations, foreign currencies, partnerships, and governmental entities, students will learn to perform calculations, record journal entries, and prepare financial statements according to generally accepted accounting principles, and the Governmental Accounting Standards Board.

ACCG 251 Accounting Seminar
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
With this course students will learn special topics of current interest.

ACCG 260 Microcomputer Accounting Systems
Term Prerequisite: ACC 211
Semester Prerequisite: ACC 210
The Accounting Systems course is designed to prepare students to deal with problems and issues related to computer based information systems and related accounting software with an emphasis on systems.

ACCG 265 Independent Study in Accounting
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
With this course students will learn advanced accounting topics as a part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum for each credit earned of eight to 16 classroom hours or 48 independent study hours.

ACCG 271 Principles of Finance
Term Prerequisite: ACC 212
Semester Prerequisite: ACC 211
This course emphasizes the short- and long-term decisions a financial manager may face. Topics include working capital management, risk, cost of capital, capital markets, long-term debt, stocks and dividend policy, mergers and acquisitions, and international financial markets as these topics relate to obtaining financing for a business.

ACCG 280 Governmental Accounting
Term Prerequisite: ACC 212
Semester Prerequisite: ACC 211
Given a public or not-for-profit entity's financial data, students will be able to record transactions and prepare financial statements according to the Governmental Accounting Standard Board's guidelines.

ACCG 290 Auditing
Term Prerequisite: ACC 222/Departmental Approval
Semester Prerequisite: ACC 221/Departmental Approval
Given an external audit, such as those conducted by public accounting firms, students will be familiar with audit terminology, and be able to perform entry level audit functions according to Generally Accepted Auditing Standards and Statements on Auditing Standards.

ACCG 295 Accounting Theory Review
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide C.P.A. exam candidates a background of information needed to complete the exam. Its focus is on the fundamentals and assumptions of accounting theory. Typical examination questions and problems are covered using current material and past exams.

ACCG 296 Commercial Law Review
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide C.P.A. exam candidates a background of information needed to complete the exam. Its focus is on the fundamentals and the nature of our law for business. Typical examination questions and problems are covered using current material and past exams.
ACCG 297 Auditing Review
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide C.P.A. exam candidates a background of information needed to complete the exam. Its focus is on the concepts, assumptions, and procedures of the audit. Typical examination questions and problems are covered using current material and past exams.

ACCG 298 Accounting Practice Review
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide C.P.A. exam candidates a background of information needed to complete the exam. Its focus is on the concepts and assumptions of accounting practice. Typical examination questions and problems are covered using current material and past exams.

ACCG 299 Complete CPA Review
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide C.P.A. exam candidates a background of information needed to complete the exam. Its focus is on the concepts and assumptions of accounting theory and practice; the fundamental principles and the nature of our law for business; and the concepts, assumptions, and procedures of the audit.

AERO 111 Organization of the U.S. Air Force
Term Prerequisite: None
Semester Prerequisite: None
This course reviews the doctrine and mission of the U.S. Air Force and its history, organization, and structure. Oral and written communication skills will be developed. Includes a leadership laboratory.

AERO 112 U.S. Strategic Offensive and Defensive Forces
Term Prerequisite: None
Semester Prerequisite: None
This course reviews the mission and functions of specific Air Force commands and role of commands in U.S. defense policy. It reviews the employment of contemporary military equipment and operations. Includes a Leadership Laboratory.

AERO 211 The Development of Air Power: Ascension to Prominence
Term Prerequisite: None
Semester Prerequisite: None
This course examines the factors contributing to the change in nature of the military. It examines history and theory of air power from its earliest beginnings through World War II. The evolution of air power concepts and doctrine is also reviewed. Includes a Leadership Laboratory.

AERO 212 The Development of Air Power: Key to Deterrence
Term Prerequisite: None
Semester Prerequisite: None
This course examines the history of air power from the end of World War II through present times. It also reviews the role of technology in the growth of air power employment in military and non-military operations. Includes a Leadership Laboratory.

AHCC 102 Nutrition
Term Prerequisite: Allied Health, BIO 101 Recommended
Semester Prerequisite: BIO 101 Recommended
Principles of nutrition including identification of the major nutrients, metabolism and food requirements during various life stages, effects of variations of intake, and body sources of the nutrients. Some diseases for which diet plays an important role in treatment are discussed.

AHCC 104 Patient Care Principles
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Surgical Technology/Radiologic Technology, AHCC 108 Recommended
Principles of basic patient care are presented to assist the student in managing patients in the health-care setting. Information and simulated practice will include surgical aseptic techniques, infection control procedures, taking vital signs, handling medical emergencies, and other practices emphasizing the physical and emotional aspects of basic patient care.

AHCC 106 Introduction to Pathology
Term Prerequisite: Allied Health
Semester Prerequisite: Health Careers Applicant/Student
General principles of pathology are discussed, rather than specific disease entities, to develop a new way of thinking about disease processes. Concepts of disease processes and their effect on normal structure and function of the body are emphasized.

AHCC 108 Body Systems
Term Prerequisite: Allied Health
Semester Prerequisite: Health Careers Applicant/Student
An introductory course for health career students to provide a survey of the human body and its systems. Practical application of physiological concepts is emphasized.

AHCC 205 Cultural Diversity in Health and Illness
Term Prerequisite: Departmental Approval
Semester Prerequisite: Health Professionals
The purpose of this course is to explore the cultural bond differences of health and illness. The relationship of social, cultural, political, and economic factors will be presented.

AIBL 101 Principles of Banking
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to the field of commercial banking, designed not only for newcomers to the field, but for students presently employed in banking who desire to broaden their knowledge and/or increase their opportunities for advancement.

AIBL 120 Economics for Bankers
Term Prerequisite: None
Semester Prerequisite: None
This course provides bankers with an introduction to the fundamental principles of economics. Special emphasis is placed on topics of importance to bankers. The text covers the basics of economic theory and examples of the application of economics to banking.

AIBL 130 Financial Planning for Bankers
Term Prerequisite: None
Semester Prerequisite: None
This course addresses the perspectives, principles, and practices of financial planning in an understandable, step-by-step format. Students will develop an understanding of the comprehensive process that looks at a customer's total financial picture and recommends strategies to achieve the customer's objectives.

AIBL 170 Preparing for Supervision
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to help the employee (student) prepare for the transition to supervisor, and/or to help those who wish to evaluate their own capabilities and desire to move toward a supervisory role.

AIBL 171 Customer Service for Bank Personnel
Term Prerequisite: None
Semester Prerequisite: None
A seminar that emphasizes the development of better communications skills to benefit employees, customers, and the bank. Students will learn effective ways of establishing contact, exploring customer needs, defining and resolving problems, and closing the encounter.

AIBL 172 Product Knowledge
Term Prerequisite: None
Semester Prerequisite: None
A seminar that provides an understanding of the range of financial products a bank can offer. It also explains the needs that these products meet. Emphasis is placed on basic selling skills along with product knowledge.

AIBL 173 Selling Bank Services
Term Prerequisite: None
Semester Prerequisite: None
This course will help develop vital selling skills. Focusing on how a consumer makes the decision to buy, the course shows how to facilitate the process by proposing services that truly meet the customer's financial needs.

AIBL 174 Personnel and the Law
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to provide an introduction and overview to the principles and application of laws affecting banking personnel policies and procedures. The seminar will be most applicable to bank personnel officers, managers, branch managers, and supervisors.

AIBL 175 Bank Security for Customer Contact Personnel
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to teach students how to prevent security problems from arising by developing good security habits. It develops students' ability to detect security threats and to handle them in a way that ensures personal safety and minimizes the loss of depositor funds.

AIBL 176 Compliance Management
Term Prerequisite: None
Semester Prerequisite: None
This seminar takes students through the steps leading to an effective compliance program. The course provides guidelines for determining how the compliance function fits with the overall bank structure. It also explains how to implement a valid program and discusses ways to monitor and audit the program.
AIBL 177  Officer Calling Skills
Term Prerequisite: None
Semester Prerequisite: None
Calling or business loan prospect is a skill and an art. This course is designed to assist appropriate bank personnel in developing their skills more completely. Students will learn and practice techniques designed to generate and maintain solid business relationships with commercial clients.

AIBL 178  Problem Loans
Term Prerequisite: None
Semester Prerequisite: None
This course outlines an effective program of loan analysis, points out the early warning signals of problem loans, and shows students how to minimize losses should a problem loan occur.

AIBL 179  Consumer Bankruptcy
Term Prerequisite: None
Semester Prerequisite: None
This seminar presents, in non-technical terms, the history and development of the bankruptcy code, the specific provisions of the 1984 bankruptcy amendments and federal judgeship act affecting Chapters 7 and 13 filings, and the ways in which banks can minimize losses from consumer bankruptcies.

AIBL 190  Real Estate Documentation
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of the personal banking concept and explains how personal banking skills are integrated into each job. It also outlines general sales, communication, and problem-solving skills needed to assume the personal banker role and how these skills work within relationship banking.

AIBL 206  Money and Banking
Term Prerequisite: AIB 120/Departmental Approval
Semester Prerequisite: AIB 120/Departmental Approval
This course presents a fundamental treatment of how money functions in the U.S. and world economies. Topics include the concept of money supply, the role a bank plays as a money creator and participant in the nation’s payment mechanism, monetary and fiscal policies, the federal reserve, and more.

AIBL 207  Consumer Lending and Loan Training
Term Prerequisite: None
Semester Prerequisite: None
This course offers essential information about the maze of regulations that govern credit practices and reviews loan processing, cross-selling, and collections. Case studies and role plays are offered to acquaint students with effective loan interviewing skills and hands-on training to improve the quality of the credit decision.

AIBL 208  Commercial Lending and Loan Documentation
Term Prerequisite: ACC 210/Departmental Approval
Semester Prerequisite: ACC 210/Departmental Approval
This course focuses on how the commercial lending business is organized, how it contributes to bank profitability, and the total commercial lending process. Students will learn the credit-granting process which will help ensure asset quality, avoid pitfalls, and protect the bank's integrity.

AIBL 212  Analysis of Financial Statements
Term Prerequisite: ACC 210/Equivalent
Semester Prerequisite: ACC 210/Equivalent
Provides the opportunity to further develop the skills necessary to conduct a comprehensive and effective financial analysis of a business borrower in order to assess repayment capacity.

AIBL 214  Law and Banking: Principles
Term Prerequisite: None
Semester Prerequisite: None
Legal principles and a general review of legal problems pertaining to business and banking. Includes contracts, consideration, statute of frauds, commercial paper, bank deposits, bank collections, sales, titles, agencies, and extracts from the uniform commercial code.

AIBL 215  Law and Banking: Applications
Term Prerequisite: AIB 214 Recommended
Semester Prerequisite: AIB 214 Recommended
This course is an introduction to laws pertaining to secured transactions, letters of credit, and the bank collection process. Students will review the legal implications of normal activities and transactions in banking operations, the impact of the law, and applicable bank regulations.

AIBL 221  Branch Banking Series
Term Prerequisite: None
Semester Prerequisite: None
A variety of topics are presented in this class to help new and prospective branch managers prepare for their new responsibilities. Credit, human resource management, managing stress in the branch, and marketing are presented to help students sharpen their skills and perform their job more effectively.

ANAT 145  Introductory Anatomy and Physiology
Term Prerequisite: None
Semester Prerequisite: None
An introductory course in human anatomy and physiology which combines lecture and laboratory experiences to provide a basic understanding of the structure and function of body systems. Designed for vocational programs, including dental assistant and medical transcriptionist, as well as non-science majors.

ANAT 151  Anatomy and Physiology I
Term Prerequisite: None
Semester Prerequisite: None
First course of a two-semester sequence in human anatomy and physiology emphasizing the structure and function of cells and tissues, the skeletal, muscular and nervous systems, and special sense organs.

ANAT 152  Anatomy and Physiology II
Term Prerequisite: 2.0 Minimum in ANT 151
Semester Prerequisite: 2.0 Minimum in ANAT 151
The second of a two semester sequence emphasizing structure and function of the endocrine, digestive, respiratory, circulatory, respiratory and reproductive systems. Includes fetal development and genetics.

ANTH 201  Human Anatomy
Term Prerequisite: 2.0 Minimum in BIO 101, CEM 110/Equivalent/Pass Proficiency Exams
Semester Prerequisite: BIOL, CHEM Recommended
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.

ANTH 270  Cultural Anthropology
Term Prerequisite: SS 101/SA 200
Semester Prerequisite: SOCL 120
This course compares ways of life for societies worldwide using anthropological theory and methodology. Basic institutions of human society, such as kinship, religion, law, politics, and economics are examined to provide a better understanding of the diversity of contemporary societies. Focuses on non-Western societies.

ANTH 275  Physical Anthropology and Archeology
Term Prerequisite: SS 101/SA 200
Semester Prerequisite: SOCL 120
Introduces human biological and cultural evolution, mechanisms of evolution, biological and cultural evidence from the fossil record, culture as an adaptive mechanism, and modern human variation.

ANTH 276  Prehistoric Archeology
Term Prerequisite: SS 101/SA 200
Semester Prerequisite: SOCL 120
A general survey of archeology. Includes an overview of the history of the field and the basic theories and methods employed in the study of archeological cultures. Archeological sites and cultures are used as examples.

ARCH 100  Introduction to Architecture
Term Prerequisite: None
Semester Prerequisite: None
This course is for students with no previous experience in basic architectural drafting. Students will be introduced to the proper techniques of architectural line work, lettering, orthographic projection, and axonometric drawings. Techniques of architectural dimensioning, the use of symbols, and the production of a basic floor plan will be accomplished.

ARCH 101  Architectural Drafting I
Term Prerequisite: AT 100
Semester Prerequisite: ARCH 100/Equivalent
This course is the first of a four-part (core) series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques to draw a series of residential details. Development of professional quality drafting, lettering, research, and communication techniques will be emphasized.

ARCH 102  Architectural Drafting II
Term Prerequisite: AT 201
Semester Prerequisite: ARCH 101
This course is the second in a four-part (core) series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques and knowledge of residential detailing design and drafting architectural design problems, residential floorplans, elevations, and building sections.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td>3</td>
<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>Students with very little or no previous experience in the production of architectural graphics will be exposed to the basic techniques of sketching, axonometric, and perspective drawings. The theory and production of the most commonly used professional techniques of black and white architectural rendering and basic modeling will be studied.</td>
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<tr>
<td>ARCH 122</td>
<td>Visual Communication II</td>
<td>3</td>
<td>Term Prerequisite: AT 152</td>
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<tr>
<td></td>
<td>Semester Prerequisite: ARCH 121/Equivalent</td>
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<td>This course is a continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media.</td>
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<tr>
<td>ARCH 123</td>
<td>Visual Communication III</td>
<td>3</td>
<td>Term Prerequisite: AT 253</td>
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<td></td>
<td>Semester Prerequisite: ARCH 122</td>
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<td>The ability to realistically depict three dimensional architectural spaces and related entourage, using the students' previously obtained graphic production knowledge, is the goal of this course. An emphasis on developing the use of light and shadow and the true depiction of textures and materials will be taught.</td>
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<tr>
<td>ARCH 126</td>
<td>Model Building</td>
<td>2</td>
<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>Students in this course will enhance their design and communications 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.</td>
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<tr>
<td>ARCH 128</td>
<td>Residential Planning</td>
<td>2</td>
<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>This course is designed for beginning through advanced students of architecture who want to study the theories behind the design of the American single-family residence. Architectural styles, planning concepts, the writing of design criteria programs, and the production of basic diagrams through finished concept drawings will be accomplished.</td>
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<tr>
<td>ARCH 141</td>
<td>Architectural History I</td>
<td>3</td>
<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>Beginning with ancient times, this course studies the major civilizations which have contributed to the development of the architecture of world civilizations. A wide variety of visual media will be used to present the major theories, works, and personalities in architecture and the decorative arts through the Renaissance.</td>
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<tr>
<td>ARCH 142</td>
<td>Architectural History II</td>
<td>3</td>
<td>Term Prerequisite: AT 247 Recommended</td>
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<td>Semester Prerequisite: ARCH 141 Recommended</td>
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<td>This course, the second in a series, examines the greatest works and principal figures in world architectural history from the 1900s forward. Using a variety of visual media this course will look at the principal works, theories, and individuals who have had the greatest impact on architecture and decorative arts to the present day.</td>
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<tr>
<td>ARCH 146</td>
<td>Preservation and Adaptive Re-use Architecture</td>
<td>2</td>
<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>This course is designed as an overview of the principles and practices of preservation, restoration and adaptive re-use architecture. Students will have the opportunity to work on a project of their choosing while being introduced to research methods, publications, and examples of preservation and new uses for existing structures.</td>
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<tr>
<td>ARCH 201</td>
<td>Architectural Drafting I</td>
<td>4</td>
<td>Term Prerequisite: AT 232</td>
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<td></td>
<td>Semester Prerequisite: ARCH 102, ARCH 141</td>
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<td>This course is the third of a four-part (core) series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting, research, and presentation skills to design, delineate, present, and draft a light commercial project from basic schematics to working drawings.</td>
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<tr>
<td>ARCH 202</td>
<td>Architectural Drafting IV</td>
<td>4</td>
<td>Term Prerequisite: AT 233</td>
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<td>Semester Prerequisite: ARCH 201, ARCH 271</td>
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<td>Concurrency</td>
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<td>This course is the conclusion in a four-part (core) series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting, research, and presentation skills to complete the working drawing floor plans, elevations, sections, and details for the light commercial projects started in the preceding course.</td>
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<tr>
<td>ARCH 211</td>
<td>Design Studio I</td>
<td>3</td>
<td>Term Prerequisite: AT 231</td>
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<td>Semester Prerequisite: ARCH 101</td>
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<td>This course is an introduction to the basic theories and methods of architectural design, problem-solving techniques, and design methodologies using contemporary architects as examples. Students will be given a series of problem-solving exercises and will be instructed in developing presentation and verbal techniques to present their solutions.</td>
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<td>ARCH 212</td>
<td>Design Studio II</td>
<td>3</td>
<td>Term Prerequisite: AT 162</td>
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<td>Semester Prerequisite: ARCH 211</td>
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<td>This course will use the skills developed in ARCH 211 to expand the student's understanding and processes for designing three-dimensional architectural space. Using models and various graphical mediums, students will explore the effects of scale, circulation, light, color, and texture on the spaces and forms created.</td>
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<tr>
<td>ARCH 221</td>
<td>Architectural DataCAD I</td>
<td>4</td>
<td>Term Prerequisite: AT 230</td>
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<td></td>
<td>Semester Prerequisite: ARCH 101</td>
<td></td>
<td>Concurrency</td>
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<td>This entry level course introduces the computer-aided drafting and design software, DataCAD, on an IBM PC computer. Students will create basic residential plans using two dimensional editing functions. DataCAD's AEC and 3-D Modeler will also be used for presentations and commercial drafting applications. No previous computer experience is necessary.</td>
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<tr>
<td>ARCH 222</td>
<td>Architectural DataCAD II</td>
<td>4</td>
<td>Term Prerequisite: AT 277</td>
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<td>Semester Prerequisite: ARCH 221</td>
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<td>This advanced level course continues to develop the students' skills using the DataCAD software. Complex three dimensional entities including contours, mesh surfaces, and surfaces of revolution will be used on models and site plans. The photo-realistic rendering program Velocity will be introduced for a variety of perspective drawings.</td>
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<tr>
<td>ARCH 225</td>
<td>Architectural DataCAD Project Lab</td>
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<td>Term Prerequisite: AT 278</td>
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<td>Semester Prerequisite: ARCH 222</td>
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<td>This is an advanced level, computer-aided drafting and design independent study course using DataCAD software. After completing all available structured DataCAD courses, the students will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor.</td>
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<tr>
<td>ARCH 231</td>
<td>Architectural AutoCAD I</td>
<td>4</td>
<td>Term Prerequisite: AT 230</td>
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<td>Semester Prerequisite: ARCH 101</td>
<td></td>
<td>Concurrency</td>
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<td>This entry level course introduces AutoCAD, a PC-based computer graphic system, for architectural applications. No computer experience is needed. Students will concentrate on two-dimensional drawing and editing functions for creating floor plans, elevations, and building sections. An introduction to three-dimensional modeling techniques will also be covered.</td>
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<tr>
<td>ARCH 232</td>
<td>Architectural AutoCAD II</td>
<td>4</td>
<td>Term Prerequisite: AT 265</td>
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<td>Semester Prerequisite: ARCH 231</td>
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<td>This course is a continuation of AutoCAD I. Complex three dimensional shapes and solids will be used to model designs for presentation graphics. The rendering program AutoShade will be used to realistically enhance the models. An introduction to Auto LISP programs will also be covered.</td>
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<tr>
<td>ARCH 235</td>
<td>Architectural AutoCAD Project Lab</td>
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<td>Term Prerequisite: AT 266</td>
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<td>Semester Prerequisite: ARCH 232</td>
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</tbody>
</table>
|            | This is an advanced level, computer-aided drafting and design independent study course using AutoCAD software. After completing all available structured AutoCAD courses, the student will outline, research, design, and construct a project of his/her own selection, with the approval and guidance of the instructor.
ARCH 241 Architectural AE of Graphics I 4
Term Prerequisite: AT 230
Semester Prerequisite: ARCH 101/Concurrently
This course is designed as an entry level computer-aided drafting and design course using the AES software. Students will learn to build command strings in the modeling program to construct 3-D geometry, edit, create layers, plot, apply text and dimensions, and open and close graphic windows.

ARCH 242 Architectural AE of Graphics II 4
Term Prerequisite: AT 243
Semester Prerequisite: ARCH 241
This course will build on the knowledge gained in ARCH 241 and will add additional applications in modeling, file management, plotting, and rendering.

ARCH 261 Architectural CADAM Computer Graphics I 4
Term Prerequisite: AT 230
Semester Prerequisite: ARCH 101/Concurrently
This course is an introduction to the CADAM drafting software system. Students will learn to create multi-view drawings with dimensions and notes. Emphasis will be placed on producing architectural working/detail drawings.

ARCH 262 Architectural CADAM Computer Graphics II 4
Term Prerequisite: AT 282
Semester Prerequisite: ARCH 261
This is an advanced level architectural computer-aided drafting and design course using Mainframe CADAM software. Students will learn how to use the advanced features of CADAM which include overlay, file management, standard library creation, sets and attributes, 3-D construction, grouping, and an introduction to the AEC design base software.

ARCH 265 Architectural CADAM Computer Graphics Project Lab 2
Term Prerequisite: AT 282
Semester Prerequisite: ARCH 282
This is an advanced level computer-aided drafting and design independent study course, using CADAM software. After completing all available structured CADAM courses, students will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor.

ARCH 271 Structural Theory 4
Term Prerequisite: AT 230/Concurrently
Semester Prerequisite: ARCH 101/Concurrently
This course introduces the principles of statics and relates the application of physical forces to structural materials and elements. The structural and design properties of steel, wood, and concrete will be studied. The ability to read structural tables and accurately make calculations will be emphasized.

ARCH 273 Environmental Systems 4
Term Prerequisite: AT 230
Semester Prerequisite: ARCH 101/Concurrently
This course is designed for architecture and interior architecture students. All elements affecting the interior environment of a commercial or residential structure, such as lighting, HVAC systems, and acoustics, will be studied. Calculations and the sizing of systems will be part of all sections.

ARCH 276 Alternative Structures 2
Term Prerequisite: AT 230
Semester Prerequisite: ARCH 101/Concurrently
The study of post and beam, underground, stress skin, and other alternative methods of construction will be studied in this course.

ARCH 278 Energy Systems 3
Term Prerequisite: None
Semester Prerequisite: None
A examination of all commonly used passive and active energy systems, energy efficient design, and the materials relating to insulation of residential and commercial construction will be reviewed in this course.

ARCH 283 Materials of Construction 4
Term Prerequisite: AT 230
Semester Prerequisite: ARCH 101/Concurrently
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.

ARCH 295 Architectural Project Lab 2
Term Prerequisite: 2nd Year Student/Approval
Semester Prerequisite: ARCH 295/2nd Year Student/Approval
This course provides the second-year architecture student with the opportunity to pursue a project of personal interest under the supervision of an instructor. With the approval and under the guidance of the instructor, the student will outline, research, design, and construct a project of his/her own selection.

ARCH 297 Architectural Project Lab 4
Term Prerequisite: 2nd Year Student/Approval
Semester Prerequisite: 2nd Year Student/Approval
This course provides the second-year architecture student with the opportunity to pursue a project of personal interest under the supervision of an instructor. With the approval and under the guidance of the instructor, the student will outline, research, design, and construct a project of his/her own selection.

ARTS 005 Computer Graphics Lab 5
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval, Currently Enrolled Art Student ARTS 005 determines the time for the student's attendance in the Computer Graphics Laboratory. It is not a course. ARTS 005 enables the student to utilize the laboratory equipment and software to create individualized computer graphics for art courses conducted in a traditional classroom environment.

ARTS 101 Design I 3
Term Prerequisite: None
Semester Prerequisite: None
Universal elements and principles of design, design theory and vocabulary with emphasis on composition and its application to black and white media.

ARTS 102 Design II 3
Term Prerequisite: ART 101
Semester Prerequisite: ARTS 101
A continuation of two-dimensional design principles with emphasis on color theory, color interaction, properties, principles, and qualities of color.

ARTS 103 Design III 3
Term Prerequisite: ART 102
Semester Prerequisite: ARTS 102
Line, shape, form, value, and texture are explored using a variety of three-dimensional materials and applying principles and elements of design.

ARTS 111 Computer Graphics/Art I 3
Term Prerequisite: ART 101, ART 131, CPS 100
Semester Prerequisite: ARTS 101, ARTS 131, CPS 120, Departmental Approval
A beginning course for students interested in creating artistic images with the aid of a computer. Emphasis is on hands-on training using sophisticated, user-friendly artistic software. Students must show evidence of design and drawing skills to receive department approval.

ARTS 112 Computer Graphics/Art II 3
Term Prerequisite: ART 102, ART 111
Semester Prerequisite: ARTS 102/Concurrently, ARTS 111, Departmental Approval
A continuation of Computer Graphics I (ARTS 111) with emphasis on color and digitizing images with the aid of a computer to create more sophisticated work. Knowledge of color theory recommended.

ARTS 120 Electronic Design I 3
Term Prerequisite: ART 101
Semester Prerequisite: ARTS 101/Concurrently
An introductory hands-on course designed to provide the student with a working knowledge of page layout and related software programs utilizing a Macintosh computer. Emphasis on electronic publishing applications.

ARTS 121 Electronic Design II 3
Term Prerequisite: ART 120, ART 143, ART 150
Semester Prerequisite: ARTS 120, ARTS 163, ARTS 180, Departmental Approval
An advanced hands-on course in electronic publishing techniques with an emphasis on graphic design and layout. Expands on concepts introduced in Electronic Design I (ARTS 120). Includes word processing, scanning, digitizing, and manipulation of graphics.

ARTS 131 Drawing 3
Term Prerequisite: ART 101
Semester Prerequisite: ARTS 101/Concurrently
A studio class using a variety of tools and methods. Introduces realism, abstraction, and stream of consciousness, using materials such as pencil, ink, and Conte crayon.

ARTS 132 Life Drawing 3
Term Prerequisite: ART 101, ART 131
Semester Prerequisite: ARTS 101, ARTS 131
Basic concepts, approaches, and techniques involving drawing the human figure, using materials such as pencil, ink, charcoal, and Conte crayon.

ARTS 137 Perspective Drawing 3
Term Prerequisite: None
Semester Prerequisite: None
Basic principles of perspective drawing utilized in product and architectural illustration. Includes one-, two-, and three-point perspective. For both Commercial Art and Fine Art students.
ARTS 140 Printmaking I  
Term Prerequisite: ART 101  
Semester Prerequisite: ARTS 101/Concurrently  
An introduction to the various printmaking techniques, tools, and vocabulary of the printmaker. Includes etching, embossing, monoprinting, and linoleum cut.

ARTS 141 Printmaking II  
Term Prerequisite: ART 135  
Semester Prerequisite: ARTS 140, Departmental Approval  
Students expand on processes and concepts introduced in Printmaking (ARTS 140). Emphasizes refining technical skills and conceptual development.

ARTS 142 Advanced Printmaking  
Term Prerequisite: ART 139  
Semester Prerequisite: ARTS 141, Departmental Approval  
An opportunity for the advanced student to continue with his/her personal exploration and development of printmaking skills under the guidance of an instructor.

ARTS 145 Screen Printing I  
Term Prerequisite: None  
Semester Prerequisite: None  
An introduction to basic silkscreen stencil processes with an emphasis on registration techniques. Includes constructing a frame and making a phototransparency.

ARTS 146 Screen Printing II  
Term Prerequisite: ART 140  
Semester Prerequisite: ARTS 145, Departmental Approval  
Students expand on processes and concepts introduced in Screen Printing (ARTS 145). Exploration and experimentation with more complex techniques and problems. An in-depth study of photographic processes and combining paper, cut film and block out stencils.

ARTS 147 Advanced Screen Printing  
Term Prerequisite: ART 141  
Semester Prerequisite: ARTS 146, Departmental Approval  
An opportunity for the advanced student to continue with his/her personal exploration and development of screen printing skills under the guidance of an instructor.

ARTS 155 Art Form Development I  
Term Prerequisite: RDG 150, WRI 112  
Semester Prerequisite: WRT 112, READ 115  
A survey of the history of art as a formal language which deals with universal themes. Examines how and why particular subjects and styles are unique to the following cultures: Pre-Historic, Native American, Pre-Columbian, African, Ancient (near East and Mediterranean), Byzantine, Islamic, Medieval, and the Far East.

ARTS 156 Art Form Development II  
Term Prerequisite: ART 155, ART 156  
Semester Prerequisite: ARTS 155  
A survey of the history of art as a formal language which deals with universal themes. Examines how and why particular subjects and styles are unique to the following time periods: Renaissance, Mannerist, Baroque, Rococo, Romantic, Modern, and Post-modern. Personal styles of significant artists are also covered.

ARTS 162 Typography and Layout Indication  
Term Prerequisite: ART 101  
Semester Prerequisite: ARTS 101/Concurrently  
Use of type in communications design with an emphasis on creativity. Includes history of typography, type style identification, classification, and selection. Student will be introduced to the tools, materials, and techniques necessary to professionally render comprehensive layouts.

ARTS 163 Pre-Press Production Techniques  
Term Prerequisite: None  
Semester Prerequisite: None  
An overview of the corporate image and the design process for pre-press production including pagination, color separations, copy preparation, and paper selection. Includes an overview of printing terminology and processes. Emphasis on professional accuracy.

ARTS 170 Computer Graphics for Media  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Departmental Approval  
An introduction to computer graphic techniques for students whose major emphasis is video production.

ARTS 171 Computer Graphics for Photography  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Departmental Approval  
An introduction to computer manipulation of photographic images for art and photography majors.

ARTS 180 Communication Design I  
Term Prerequisite: ART 101, ART 145  
Semester Prerequisite: ARTS 101, ARTS 162  
An overview of the corporate image and the designer's role in developing relevant design materials, including the logotype and its varied applications. Color, paper, and type selection for the individual client will be emphasized.

ARTS 181 Communication Design II  
Term Prerequisite: ART 150, ART 102, ART 143, ART 120  
Semester Prerequisite: ARTS 120/Concurrently, ARTS 102, ARTS 163, ARTS 180  
An overview of publication and advertising design and the designer's role in the creative organization of typography, photography, and illustration. Emphasis on editorial concept, format, and design considerations.

ARTS 182 Communication Design III  
Term Prerequisite: ART 120, ART 210, MKT 140  
Semester Prerequisite: ARTS 120, ARTS 161, MKTG 140, Departmental Approval  
An advanced course involving the design of promotional graphics, both two- and three-dimensional, and utilizing innovative design and media considerations. Students will work through the design process from initial concept to final presentation.

ARTS 200 Painting I  
Term Prerequisite: ART 102, ART 131  
Semester Prerequisite: ARTS 102, ARTS 131  
An introduction to objective oil painting concepts in the realistic tradition. Examines basic materials, tools, and handling qualities.

ARTS 201 Painting II  
Term Prerequisite: ART 200  
Semester Prerequisite: ARTS 200  
A continuation of Painting (ARTS 200) emphasizing more advanced techniques and increasingly complex problems in oil painting.

ARTS 202 Advanced Painting  
Term Prerequisite: ART 201  
Semester Prerequisite: ARTS 201, Departmental Approval  
An opportunity for the advanced student to continue with his/her personal exploration and development of painting skills under the guidance of an instructor.

ARTS 203 Figure Painting  
Term Prerequisite: ART 102, ART 132  
Semester Prerequisite: ARTS 102, ARTS 132  
An introductory course in the human figure using various media with primary concentration on oil painting.

ARTS 204 Watercolor I  
Term Prerequisite: ART 102, ART 131  
Semester Prerequisite: ARTS 102, ARTS 131  
An introduction to the art of transparent watercolor. Examines paper characteristics, degrees of wetness, brushes and tools, and various techniques in producing watercolor art works.

ARTS 205 Watercolor II  
Term Prerequisite: ART 204  
Semester Prerequisite: ARTS 204  
A continuation of Watercolor (ARTS 204) emphasizing more advanced techniques and increasingly complex problems using watercolor.

ARTS 206 Advanced Watercolor  
Term Prerequisite: ART 206  
Semester Prerequisite: ARTS 205, Departmental Approval  
An opportunity for the advanced student to continue with his/her personal exploration and development of watercolor skills under the guidance of an instructor.

ARTS 213 Illustration/Black and White  
Term Prerequisite: ART 131, ART 132, ART 147  
Semester Prerequisite: ARTS 131, ARTS 132, ARTS 137  
Illustrative techniques utilized to convert preliminary pencil drawings to finished ink drawings. Includes a variety of contemporary, realistic black and white techniques in both solid line and wash. Emphasis on sound craftsmanship and solving simple problems through illustration.

ARTS 214 Illustration/Color  
Term Prerequisite: ART 213, ART 204  
Semester Prerequisite: ARTS 213, ARTS 204  
Full color illustration techniques in tempera, dyes, and mixed media. Stylized drawing techniques and design-oriented composition assignments, with an emphasis on problem-solving for specific outlets such as editorial and collateral materials.
ARTS 215 Marker Illustration Techniques
Term Prerequisite: ART 102, ART 147
Semester Prerequisite: ARTS 122, ARTS 137
Development of basic rendering techniques using design markers with emphasis on stylization and simplification. Students will practice illustrating architectural and product subjects commonly used in visual communications industries.

ARTS 216 Cartoon Drawing Techniques
Term Prerequisite: ART 132, ART 147
Semester Prerequisite: ARTS 132, ARTS 137
Cartoon illustrations from simple spots to complex compositions. Emphasis on strong stylized drawing, dramatic exaggerated action, simple but imaginative characterizations, and uncolored ink rendering techniques. Exercises in pencil, fiber-tipped pen, and brush and ink.

ARTS 218 Fashion Illustration I
Term Prerequisite: ART 132
Semester Prerequisite: ART 132
Drawing the fashion figure in contemporary proportion; accurate garment sketching in black and white techniques including marker, India ink wash, pencil, conte, and charcoal.

ARTS 219 Fashion Illustration II
Term Prerequisite: ART 218
Semester Prerequisite: ARTS 218
A continuation of Fashion Illustration (ARTS 218) using contemporary color techniques including pencils, markers, crayons, watercolor, acrylic paints, and paper squares. Layouts, composition with multiple figures, and collage are introduced. Emphasis on development of personal drawing style and creative decision-making.

ARTS 220 Advanced Fashion Illustration
Term Prerequisite: ART 219
Semester Prerequisite: ARTS 219, Departmental Approval
An opportunity for the advanced student to continue with his/her personal exploration and development of fashion illustration skills under the guidance of an instructor.

ARTS 221 Airbrush Techniques I
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the operation and techniques of the airbrush in shading and creating textures in both black and white and color. Assignments include rendering metallic surfaces and transparent objects and working with multiple light sources.

ARTS 222 Airbrush Techniques II
Term Prerequisite: ART 221, ART 102
Semester Prerequisite: ARTS 221, ARTS 102
A continuation of Airbrush Techniques (ARTS 221) with an emphasis on more complex airbrushing problems including product rendering and textiles applications with work on areas of specialization.

ARTS 223 Advanced Airbrush Techniques
Term Prerequisite: ART 222
Semester Prerequisite: ARTS 222, Departmental Approval
An opportunity for the advanced student to continue with his/her personal exploration and development of airbrush skills under the guidance of an instructor.

ARTS 230 Computer Graphics/Business Presentations
Term Prerequisite: ART 112
Semester Prerequisite: ARTS 112, Portfolio Review, Departmental Approval
Presentation and analytical graphics for business applications with emphasis on composition and artistic enhancement.

ARTS 232 Computer Graphics/2-D Animation
Term Prerequisite: ART 112, ART 216
Semester Prerequisite: ARTS 112, ARTS 216, Departmental Approval
2-D character animation using the computer as a tool. Emphasis is on the history, theory, and principles of animation.

ARTS 233 Computer Graphics/2-D Interactive
Term Prerequisite: Departmental Approval
Semester Prerequisite: ARTS 233, Departmental Approval
A course which uses 2-D Animation skills to create interactive presentations. Emphasis is on basic programming concepts.

ARTS 234 Computer Graphics/3-D Animation I
Term Prerequisite: ART 113
Semester Prerequisite: ARTS 112, Portfolio Review, Departmental Approval
An introduction of 3-D solid modeling, rendering techniques and animation on a desktop graphics system. Introduction of the principles of designing for video.

ARTS 235 Computer Graphics/3-D Animation II
Term Prerequisite: ART 116
Semester Prerequisite: ARTS 234, Departmental Approval
A continuation of 3-D Animation I (ARTS 234). Emphasis on creation of more complex models and animations. Introduction of sound and video editing.

ARTS 240 Basic Art for Elementary Teachers
Term Prerequisite: None
Semester Prerequisite: None
Especially for elementary school teachers responsible for the student art experience. Emphasis on developing a greater art appreciation, awareness of art forms, and competency working with a variety of art media. Aims the creative and mental growth of children and their needs in an art situation.

ARTS 262 Advanced Illustration
Term Prerequisite: ART 214
Semester Prerequisite: ARTS 214, Departmental Approval
An opportunity for the advanced student to continue with his/her personal exploration and development of illustration skills under the guidance of an instructor. The student must submit a written application and portfolio to receive department approval.

ARTS 267 Advanced Drawing
Term Prerequisite: ART 131
Semester Prerequisite: ARTS 131, Departmental Approval
An opportunity for the advanced student to continue with his/her personal exploration and development of drawing skills under the guidance of an instructor. The student must submit a written application and portfolio to receive department approval.

ARTS 268 Advanced Life Drawing
Term Prerequisite: ART 132
Semester Prerequisite: ARTS 132, Departmental Approval
An opportunity for the advanced student to continue with his/her personal exploration and development of life drawing skills under the guidance of an instructor. The student must submit a written application and portfolio to receive department approval.

ARTS 269 The Portfolio
Term Prerequisite: SD 127
Semester Prerequisite: SDEV 127/Concurrently, Departmental Approval
The student will assemble his/her best work under instructor supervision into a cohesive, relevant presentation for the purpose of securing employment in a chosen career area. Intended to be a terminal course in the Art Program.

ARTS 270 Computer Graphics Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his/her project to receive department approval.

ARTS 272 Printmaking Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his/her projects to receive department approval.

ARTS 274 Commercial Art Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An individual pursuit of special projects not incorporated in regular class offerings. Students must submit a written application detailing their projects for department approval.

ARTS 276 Art Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his/her project to receive department approval.

ARTS 280 Computer Graphics Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An off-campus field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty member. A minimum of 15 hours per week.
ARTS 281 Art Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An off-campus field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty member. A minimum of 15 hours per week.

ARTS 282 Commercial Art Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An off-campus field study, students will gain pre-career experience by working in a studio environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty member. A minimum of 15 hours per week.

ARWS 120 Basic Drawing
Term Prerequisite: None
A one-credit course using a variety of materials including pencil, charcoal, and ink. For non-majors.

ARWS 131 Computer Graphics Workshop
Term Prerequisite: None
A one-credit workshop introducing computer graphics utilizing software. Programming skills are necessary.

ARWS 133 Introduction to PageMaker
Term Prerequisite: None
Semester Prerequisite: None
A one-credit workshop designed to provide the student with a working knowledge of Aldus PageMaker software utilizing a Macintosh computer. Emphasis is on desktop publishing applications.

ARWS 134 Introduction to FreeHand
Term Prerequisite: None
Semester Prerequisite: None
A one-credit workshop designed to provide the student with a working knowledge of Aldus FreeHand software utilizing a Macintosh computer. Emphasis is on desktop publishing applications.

ARWS 135 Desktop Design Fundamentals
Term Prerequisite: None
Semester Prerequisite: None
A one-credit seminar focusing on basic graphic design concepts to help the student improve the appearance and effectiveness of desktop publishing projects. This is a one-hour computer course.

ARWS 141 Watercolor Workshop
Term Prerequisite: None
Semester Prerequisite: None
A one-credit course introducing the student to the art of transparent watercolor. Emphasis is on the use of different papers, degrees of wetness, tools, and techniques. Students will progress to more complex problems as ability develops.

ARWS 145 Landscape Painting and Drawing
Term Prerequisite: None
Semester Prerequisite: None
Emphasis on the use of color, perspective and compositional strategies of the landscape. Most sessions spent in the field. All media welcome.

ARWS 190 Matting and Framing Techniques
Term Prerequisite: None
Semester 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.

ARWS 200 Handmade Paper
Term Prerequisite: None
Semester Prerequisite: None
A one-credit course introducing the student to the art of handmade paper. Emphasis on making and casting techniques. Students will progress to more complex problems as ability develops.

ARWS 221 Calligraphy I
Term Prerequisite: None
Semester Prerequisite: None
Introduces the student to the art of fine writing using italic pens. Emphasis on hand lettering, surveying different styles and scripts used in early manuscripts, and adaptation to modern use.

ARWS 222 Calligraphy II
Term Prerequisite: ARWS 221
Semester Prerequisite: ARWS 221
A continuation of Calligraphy I (ARWS 221) emphasizing a variety of tools, materials, and techniques. Students will progress to more complex problems and experiment with aesthetic expression as skills progress.

ARWS 224 Cartooning Workshop
Term Prerequisite: None
Semester Prerequisite: None
Emphasizes simple but imaginative characterizations and dramatic exaggerated action in a variety of media including pencil, fibertipped pen, and brush and ink. Previous drawing experience helpful.

ARWS 226 Newsletter Design Workshop
Term Prerequisite: None
Semester Prerequisite: None
Students will learn to produce a visually appealing newsletter with emphasis on designing for optimal readability. Includes design of masthead and format and use of typography for text, headings, and subheadings. Use of graphics and photography.

ASTR 201 Introductory Astronomy
Term Prerequisite: None
Semester Prerequisite: None
A non-mathematical survey of astronomy. Topics include ancient astronomy, the night sky, telescopes, space exploration, the solar system, stellar evolution, neutron stars and black holes, galaxies and quasars, cosmology, and the expanding universe. The LCC planetarium and observatory augment laboratory activities which illustrate important concepts in astronomy.

AUTO 100 Auto Service I
Term Prerequisite: None
Semester Prerequisite: None
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.

AUTO 101 Basic Automotive Seminar
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to introduce the student to the techniques and requirements of basic automotive maintenance.

AUTO 110 Auto Electrical Theory
Term Prerequisite: AUT 100/Concurrently
Semester Prerequisite: AUTO 100/Concurrently
This course presents the fundamental principles of theory, operation, construction, diagnosis, and repair of the electrical components of automobiles and trucks.

AUTO 120 Auto Drive Train
Term Prerequisite: AUT 100/Concurrently
Semester Prerequisite: AUTO 100/Concurrently
This course presents the techniques necessary to service and repair manual transmissions, both rear and front-wheel drive, clutches, drive shafts, and differentials.

AUTO 121 Automatic Transmissions
Term Prerequisite: AUT 100, 120
Semester Prerequisite: AUTO 100, 120
A one-credit course in rear and front-wheel drive automatic transmission repair covering theory of operation, vocabulary, diagnosis techniques, repair procedures, and testing methods.

AUTO 122 Advanced Transmission
Term Prerequisite: AUT 121, 122
Semester Prerequisite: AUTO 121
This course focuses on larger transmissions such as those used in large vans and medium-duty trucks. (4WD automatics are included.)

AUTO 130 Automotive Engines
Term Prerequisite: AUT 100/Concurrently
Semester Prerequisite: AUTO 100/Concurrently
This course provides a background in principles, design, operation, and service procedures of gasoline engines and preparation for practical experience in engine maintenance and service.

AUTO 133 Small Engine Repair
Term Prerequisite: None
Semester Prerequisite: None
This is a basic course covering servicing and repair of two-cycle and four-cycle small gas engines. Each student is required to supply a small engine for laboratory work.
AUTO 135 Chain Saw Repair 2.5
Term Prerequisite: None
Semester Prerequisite: None
This is a basic course for chain saw owners and mechanics covering basic maintenance, safe operation, tune-up, troubleshooting, major repair, chain oilers, and chain sharpening and repair.

AUTO 136 Marine Engine Repair 2.5
Term Prerequisite: None
Semester Prerequisite: None
This course covers the basics of outboard engine servicing including carburetion, ignition, and troubleshooting malfunctions.

AUTO 137 Motorcycle Repair 2.5
Term Prerequisite: None
Semester Prerequisite: None
This course covers the theory of operation of a motorcycle and basic service procedures, including tune-up, wheel service, brake service, and drive mechanisms.

AUTO 140 Automotive Brakes 2.5
Term Prerequisite: AUT 106/Concurrently
Semester Prerequisite: AUTO 100/Concurrently
This course covers servicing both drum and disc brakes, including adjustment, shoe replacement, drum and disc turning, pad replacement and hydraulic system service.

AUTO 150 Automotive Suspension 2.5
Term Prerequisite: AUT 100/Concurrently
Semester Prerequisite: AUTO 100/Concurrently
This course covers the suspension systems on automobiles and light trucks. Included is inspection, parts replacement, and extensive instruction on the use of four-wheel alignment equipment.

AUTO 160 Auto Air Conditioning 2.5
Term Prerequisite: AUT 110
Semester Prerequisite: AUTO 110
Instruction in the operating principles of auto air conditioning systems and repair procedures.

AUTO 165 General Auto Mechanics 2.5
Term Prerequisite: None
Semester Prerequisite: None
Automobile owners will gain a better understanding of the automobile and be able to make some repairs. Areas covered include preventive maintenance, tune-ups, brakes, engines, electrical systems, drive lines, front end, and steering.

AUTO 166 General Auto Mechanics and Women 2.5
Term Prerequisite: None
Semester Prerequisite: None
Student will gain fundamental understanding of how an automobile works and will be able to perform basic maintenance and repair procedures. Topics include engines, fuel and exhaust, electrical system, cooling and lubrication, steering, brakes, and suspension. Lab work includes charging oil filters, belts, hoses, tires, bulbs, and fuses.

AUTO 190 Auto Body Welding/Metal Finishing 5
Term Prerequisite: None
Semester Prerequisite: None
This course presents metal welding as it applies to auto body repair. Included are gas, spot, and wire-feed welding, brazing, heat shrinking, and plasma arc cutting. This course also teaches basic sheet metal repair, body shop tools and their proper use, along with materials used to repair minor damaged panels.

AUTO 182 Major Collision Repair 5
Term Prerequisite: AUT 161
Semester Prerequisite: AUTO 180
This course teaches the restoration of a collision-damaged automobile to its original condition, including estimating the total job, glasswork, and painting. Instruction in repair of larger, dented panels with the emphasis on replacing panels.

AUTO 184 Uni/Frame Repair 2.5
Term Prerequisite: AUT 183
Semester Prerequisite: AUTO 162
This course is an introduction to the basics of frame straightening, covering aligning the frame or utilizing body to original specifications.

AUTO 185 Basic Auto Painting 2.5
Term Prerequisite: None
Semester Prerequisite: None
This is an auto painting course designed to teach basic refinishing procedures. The student must refinish at least one panel in acrylic enamel and acrylic lacquer by the end of the course.

AUTO 186 Advanced Painting 5
Term Prerequisite: AUT 185
Semester Prerequisite: AUTO 185
This course teaches advanced auto painting techniques for spot repair, color matching, and troubleshooting—including auto painting techniques for refinishing a complete auto in enamel and acrylic lacquer. Includes estimating the cost of materials and overhead costs of operating a paint shop.

AUTO 188 Auto Body Repair and Painting 4
Term Prerequisite: AUT 180, 181, 185
Semester Prerequisite: AUTO 180, 182, 185
This is a combined course of auto body repair and painting. It provides an opportunity to practice the techniques learned in Metal Finishing I and Painting I.

AUTO 200 Basic Diesel Maintenance 5
Term Prerequisite: None
Semester Prerequisite: None
This course covers the operational theory of heavy-duty diesels, maintenance operations, model identification, and system maintenance, including fuel systems, lubrication system, cooling system, and naturally-aspirated, supercharged, and turbocharged intake systems and their repair.

AUTO 202 Diesel Engine Rebuilding 5
Term Prerequisite: AUT 201
Semester Prerequisite: AUTO 200
This course covers rebuilding, including proper disassembly procedures, and inspection and repair of diesel engine components. Emphasis is on proper engine analysis prior to overhaul and proper run-in upon completion of overhaul.

AUTO 203 Diesel Fuel Systems 2.5
Term Prerequisite: AUT 201
Semester Prerequisite: AUTO 200
A complete course on diesel fuel systems covering fuel classification, fuel system functions, pumps and injectors, proper diagnosis, troubleshooting, and rebuilding the complete fuel system.

AUTO 215 Engine Performance 5
Term Prerequisite: AUT 210/Departmental Approval
Semester Prerequisite: AUTO 110
A broad-based course covering the technology necessary to diagnose and repair drivability and electrical and fuel-related problems in automobiles and light trucks. This course will include instruction on carburetors and mechanical fuel pumps.

AUTO 220 Truck Drive Lines 2.5
Term Prerequisite: Departmental Approval
Semester Prerequisite: AUTO 100/Concurrently
This course covers the theory and application of the power train system—incorporating clutches, torque converters, transmissions and final drives.

AUTO 225 Automotive Computers 5
Term Prerequisite: AUT 111, 210
Semester Prerequisite: AUTO 215
This course covers the theory of operation and repair procedures on computerized engine and fuel control systems and operation of duty-cycle meters, tachometers, computerized engine analyzers, digital high-impedance multimeters, and other equipment used in servicing electronic engine-control systems.

AUTO 240 Air Brakes 2.5
Term Prerequisite: Departmental Approval
Semester Prerequisite: AUTO 100/Concurrently
This course covers brake systems, their component parts, troubleshooting, design, and control systems.

AUTO 272 Tune Up and Electrical Laboratory 6
Term Prerequisite: AUT 112, Instructor Approval
Semester Prerequisite: AUTO 215, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in tune up and electrical repair.

AUTO 273 Brake Laboratory 6
Term Prerequisite: AUT 140, Instructor Approval
Semester Prerequisite: AUTO 140, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in brake repair.

AUTO 274 Suspension Laboratory 6
Term Prerequisite: AUT 150, Instructor Approval
Semester Prerequisite: AUTO 150, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in suspension repair.

AUTO 276 Automatic Transmission Laboratory 6
Term Prerequisite: AUT 122, Instructor Approval
Semester Prerequisite: AUTO 122, Instructor Approval
This is a laboratory course designed to develop trade-entry skills in transmission repair.
AVAF 246 National Airframe Certification Procedures 1
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Study of the Federal Aviation Regulations pertaining to national certification as a licensed airframe mechanic. Includes testing in all required areas of study as prerequisite to receiving authorization to take the general and airframe national certification tests administered by representatives of the Federal Aviation Administration.

AVAF 252 Helicopter Maintenance I 3
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Covers the theory of flight, structural designs, and systems of helicopters. Also studies maintenance practices used in the construction, inspection, and repair of helicopters.

AVAF 254 Helicopter Maintenance II 3
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Advanced studies in maintenance practices used in the construction, inspection, and repair of helicopters.

AVCE 131 VFR Pilot Refresher Seminar .5
Term Prerequisite: Private Pilot License
Semester Prerequisite: Private Pilot License
This course is designed to update the knowledge of the private pilot. The focus of the course is on significant changes in Federal Aviation Regulations, Air Traffic Control Procedures, and pilot weather briefings.

AVCE 132 IFR Pilot Refresher Seminar .5
Term Prerequisite: Instrument Rating
Semester Prerequisite: Instrument Rating
This seminar is designed to update the knowledge of instrument-rated pilots. The focus of the course is on reviewing enroute and approach procedures, recent significant changes in Federal Aviation Regulations and Air Traffic Control Procedures, and pilot weather briefings.

AVCE 133 Aviation Law Seminar .5
Term Prerequisite: None
Semester Prerequisite: None
This seminar acquaints the student with the legal aspects of aviation. The student will become familiar with Federal Aviation Administration enforcement actions, methods for limiting liability, buying and selling aircraft, titles and liens, and contracts.

AVCE 134 Using LORAN-C .5
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to introduce the student to the principles of operation of LORAN-C. The student will understand the procedures for approval for using LORAN-C receivers during VFR and IFR operations, including the en route and terminal environment. The student will be familiar with the function of LORAN-C receiver components.

AVEL 100 Avionics for Pilots Seminar .5
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Familiarization with the avionics systems used in modern aircraft focusing on their proper use. Methods of testing the systems in the aircraft without complex test equipment will be discussed. The terminology used in the avionics industry will be explored in order to enhance the students' communication with avionics technicians.

AVEL 130 Avionics Installations 3
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
This course includes familiarization with the various types of wires and connectors used in the construction of aircraft wiring harnesses. The student will develop skills in soldering, aircraft wiring diagram reading, standard procedures, and weight and balance calculation.

AVEL 150 Avionics Test Generation 3
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Covers the operational characteristics and proper operation of basic and specialized test equipment found in the avionics industry. Equipment covered includes multimeters, oscilloscopes, power supplies, multifunction ramp and bench test generators, wattmeters, time domain reflectometers, and spectrum analyzers.

AVEL 151 Avionics Test Generation Lab 2
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
AVEL 150 Concurrently
Test equipment and theory discussed in AVEL 150 will be put to practical use in the laboratory. Student builds and calibrates own VOM. Common electronic and specialized avionics test equipment is used in the lab.
AVEL 190  Receiver Troubleshooting  
**Term Prerequisite:** Program Approval, AV 191 Concurrently

**Semester Prerequisite:** Program Approval, AVEL 191 Concurrently

Familiarization with basic superhetodyne receiver principles and operation using block diagrams and component level theory. Various logical troubleshooting techniques are discussed.

AVEL 191 Receiver Troubleshooting Lab  
**Term Prerequisite:** Program Approval, AV 190 Concurrently

**Semester Prerequisite:** Program Approval, AVEL 190 Concurrently

Familiarization with basic superhetodyne receiver principles and operation. Various logical troubleshooting techniques will be put to practical use in the laboratory. Students construct, align, and troubleshoot an AM superhetodyne receiver.

AVEL 200 Flight Line Testing  
**Term Prerequisite:** Program Approval, AV 201 Concurrently

**Semester Prerequisite:** Program Approval, AVEL 201 Concurrently

A study of the avionics systems found aboard modern aircraft focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADF, radar, autopilots, and others.

AVEL 201 Flight Line Testing Lab  
**Term Prerequisite:** Program Approval, AV 200 Concurrently

**Semester Prerequisite:** Program Approval, AVEL 200 Concurrently

A practical study of the electronics systems found aboard modern aircraft, focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADF, radar, autopilots, and others.

AVEL 220 Avionics Systems I  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval, AVEL 221 Concurrently

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.

AVEL 221 Avionics Systems I Lab  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval, AVEL 220 Concurrently

A hands-on study of the communications, navigation, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications.

AVEL 224 Avionics Regulation  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

This course covers various Federal Aviation Administration rules and regulations as they pertain to avionics shop operation. Federal Communications regulations are discussed to prepare the student to successfully complete the General Radiotelephone Operator examination.

AVEL 230 Avionics Systems II  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval, AVEL 231 Concurrently

A study of navigation, microwave pulse equipment, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturers' specifications. Students will have the opportunity to obtain factory certification of the repair of various systems.

AVEL 231 Avionics Systems II Lab  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval, AVEL 230 Concurrently

A hands-on study of navigation, microwave pulse equipment, and other systems found in modern aircraft, focusing on component level repair and testing to manufacturers' specifications.

AVEL 295 International Avionics Systems  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Familiarization with safety practices near large aircraft. Review of instrument systems and discussion on how these systems are designed in airliners. Discussion of navigation, communication, and pulse systems as used in transport category aircraft. Discussion of the differences and similarities between FAA regulations and those of other countries.

AVEL 297 Avionics Internship  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Twenty hours per week as an Aviation Electronics intern. Independent study. Part time occupational internship in Avionics Technology. The internships will be at certified repair stations as established by the intern coordinator.

AVEL 299 Advanced Avionics Laboratory  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Students will further develop troubleshooting and installations skills acquired in other courses. Students will work in an environment close to actual working conditions in most avionics repair stations.

AVFT 099 Flight for Technicians  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

This course provides in-flight and ground training culminating in the award of the Federal Aviation Administration Private Pilot License to an LCC maintenance or aviation graduate or current student when approved by the director of the Aviation Center. Designed to enhance the technical knowledge and skill of the maintenance or avionics technician.

AVFT 201 Flight Training I  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground training in the single-engine, non-complex aircraft culminating in aeronautical knowledge, experience and skill in accordance with the Federal Aviation Administration Private Pilot Practical Test standards.

AVFT 202 Flight Training II  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground training in single-engine non-complex airplane developing students' instrument, night, and cross-country flying skills.

AVFT 203 Flight Training III  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground training in single-engine airplane developing students' skill at IFR navigation and ATC procedures in en route and terminal environment.

AVFT 204 Flight Training IV  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground instruction in complex airplane developing students' skill in IFR navigation and ATC procedures in en route and terminal environment. Further, student will develop skills at performing commercial proficiency flight maneuvers. At completion of course, student will take practical test for commercial/instrument pilot airplane.

AVFT 205 CFI Flight Training  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground training in common primary training and complex airplanes. Student will develop instructional skills necessary to train pilots to certification in accordance with Federal Aviation Regulations. Student will take practical test for certified flight instructor airplane upon completion.

AVFT 206 Flight Instructor Instrument Flight Training  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground training in non-complex aircraft. Student will develop instructional skills necessary to train students for multi-engine practical test. Student will take multi-engine instructor practical test upon completion.

AVFT 207 Multi-Engine Flight Training  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground instruction in multi-engine airplane. Student will take multi-engine practical test upon completion.

AVFT 208 Multi-Engine Instructor Flight Training  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground instruction in multi-engine airplane. Student will develop instructional skills necessary to train students for multi-engine practical test. Student will take multi-engine instructor practical test upon completion.

AVFT 209 Airline Transport Pilot Flight Training  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground training in multi-engine aircraft. At completion of course, student will take Airline Transport Pilot practical test.

AVFT 299 Intern Flight Instructor  
**Term Prerequisite:** Program Approval

**Semester Prerequisite:** Program Approval

Provides in-flight and ground practical experience with mentor/instructor supervision for the entry-level flight instructor. Programmed for one semester with one student per entry-level instructor.
AVFT 290 Turbo Aircraft

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Provides in-flight and ground training in turbine-powered multi-engine aircraft. Cultivates aeronautical knowledge, experience, and maneuvering skills commensurate with the requirements of the entry-level first officer position for commercial turboprop aircraft.

AVGM 111 Aviation General I

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
This course is designed to develop the skills and knowledge required to weigh an aircraft and record the appropriate data. It involves mathematical and basic physics principles related to aviation, including aerodynamics, theory of flight, aircraft structural design, and simple machines.

AVGM 112 Aviation General II

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Introduces the Federal Aviation Regulations involving the mechanic's privileges and limitations and related aviation operations. Includes the selection and use of aviation publications, maintenance forms, records, reports, aircraft drawings, graphs and charts, symbols, blueprints, and system schematics. Also focuses on aircraft ground operations and servicing of related aircraft systems.

AVGM 113 Aviation General III

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
The initial aviation electrical course offering instruction in basic electrical theory and its aviation application. Includes the calculation and measurement of voltage, current, resistance, continuity, and power; the theory, inspection and servicing of aircraft lead-acid and Ni-Cd batteries; and the construction of a voltmeter.

AVGM 114 Material and Processes

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
The course covers identification and selection of the appropriate aviation hardware, hardware films, charting materials, fluid lines, and non-destructive testing methods. Includes is performance of non-destructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, installation and testing of fluid lines.

AVGS 101 Private Pilot Ground School

Term Prerequisite: None
Semester Prerequisite: None
This course prepares the student for the 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, and navigation and flight physiology.

AVGS 121 Aviation Meteorology

Term Prerequisite: AFT 100/Part Private Pilot License
Semester Prerequisite: AVGS 101/Part Private Pilot License
This course focuses on the application of meteorological theory to the practical aspects of flight planning. The student will understand basic concepts of weather theory, obtain weather briefings by using a personal computer; interpret weather charts, forecasts and reports, both domestic and international, (CIAD); make appropriate "go/no go" decisions.

AVGS 141 Fundamentals of Air Traffic Control

Term Prerequisite: None
Semester Prerequisite: None
This course will cover the history of ATC; procedures and regulations; field experience at local ATC facilities as well as working with "UNICOM"; analysis and prevention of traffic conflicts and an introduction to international ATC procedures, e.g., Eurocontrol.

AVGS 211 Instrument Pilot Ground School

Term Prerequisite: AFT 100/Part Private Pilot License
Semester Prerequisite: AVGS 101/Part Private Pilot License
This course prepares the student for the successful completion of the FAA instrument rating written examination. The student will learn operation and interpretation of the flight instruments, the use of en route, approach, SID, and STAR charts for navigation, air traffic control procedures, and meteorology as it applies to the instrument pilot.

AVGS 221 Commercial Pilot Ground School

Term Prerequisite: AFT 100/Part Private Pilot License
Semester Prerequisite: AVGS 101/Part Private Pilot License
This course prepares the student for the successful completion of the FAA commercial pilot written examination. The student will develop knowledge of aerodynamics, high performance aircraft systems, aircraft performance, Federal Aviation Regulations, navigation and flight planning, and meteorology as it applies to commercial pilots.

AVGS 222 Flight Instructor Ground School

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
This course will prepare the student for successful completion of the FAA Fundamentals of Instructing and the Flight Instructor-Airplane and Advanced Ground Instructor written exams. The student will develop a flight training syllabus with lesson plans for use in training pilots.

AVIR 140 Avionics Instruments I

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Familiarization with common aircraft instruments to include principles of operation, interpretation of indications, testing, proper handling, repair, and calibration. Students will learn the proper use of test equipment and instrument repair procedures.

AVPP 185 Preventive Maintenance

Term Prerequisite: None
Semester Prerequisite: None
This course will cover the items described in the Federal Aviation Regulation Part 43, Appendix A, titled Preventive Maintenance. These items include the removal and installation of trees, servicing of wheel bearings, and cleaning fuel and oil strainers or filter elements. The safety, responsibility, and operations of various aircraft systems will be discussed.

AVPP 241 Reciprocating Engine

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Presents the theory and practices used in the removal, inspection, overhaul, service, repair, and installation of reciprocating engines. This course also studies the inspection, service, repair, and troubleshooting of reciprocating engine lubrication systems.

AVPP 251 Reciprocating Engine Systems

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
This course covers the inspection, servicing, troubleshooting, and repair of reciprocating engine cooling and exhaust systems. In addition, the inspection requirements necessary to meet established conformity and standards of airworthiness are studied, and reciprocating engine operations and adjustments are conducted using F.A.A. and maintenance publication procedures.

AVPP 253 Reciprocating Ignition Systems

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
This course covers the operation, analysis, inspection, service, and repair of reciprocating engine ignition systems and components. This includes magneto ignition harnesses, spark plugs, and stator systems.

AVPP 255 Reciprocating Induction Systems

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Study and analysis of reciprocating engine fuel systems and components. Includes inspection, checking, servicing, troubleshooting, and repair of carburetors, water injection systems, heat exchangers, superchargers, intake and induction manifolds, and other engine fuel system components. Also includes carburetor overhaul procedures.

AVPP 257 Aircraft Propeller Systems

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Covers the theory of operation and design of the various reciprocating engine and turbine-driven auxiliary power units including the induction and cooling systems of each.

AVPP 259 Turbine Engine I

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Covers the theory of operation and design of the various reciprocating engine and turbine-driven auxiliary power units including the induction and cooling systems of each.

AVPP 261 Turbine Engine II

Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Covers inspection, checking, servicing, repair, removal, installation, and trouble-shooting of turbine engines and systems. Detailed study of the lubrication system and inspection procedures to ensure conformity with F.A.A. specifications and standards is included.
AVPP 263  Turbine Engine Systems  
Term Prerequisite: Program Approval  
Semester Prerequisite: Program Approval  
This course is a detailed study of turbine-engine ignition, pneumatic and electric starters, exhaust and thrust reverser, fire detection and protection, fuel system, and electronic fuel control systems, and components. It includes inspection, checking, servicing, repair, and troubleshooting procedures.

AVPP 265  Powerplant Instruments  
Term Prerequisite: Program Approval  
Semester Prerequisite: Program Approval  
Covers the inspection, servicing, checking, troubleshooting, and repair of both reciprocating and turbine engine electrical and mechanical fluid rate-of-flow indicating, temperature, pressure, R.P.M., airflow and related systems and components.

AVPP 267  National Powerplant Certification Procedures  
Term Prerequisite: Program Approval  
Semester Prerequisite: Program Approval  
Study of the Federal Aviation Regulations pertaining to national certification as a licensed powerplant mechanic. Includes testing in all required areas of study as prerequisite to receiving authorization to take the powerplant national certification tests administered by representatives of the Federal Aviation Administration.

AVST 211  Flight Simulator I  
Term Prerequisite: AFT 100  
Semester Prerequisite: AVGS 101 Concurrently  
Provides flight simulator and ground training to develop student’s basic attitude instrument flying skills. Course is intended to be taken concurrently with AVFT 201. Simulator used is GAT-1 (or other approved simulator).

AVST 212  Flight Simulator II  
Term Prerequisite: AFT 100, AFT 211  
Semester Prerequisite: AVGS 101, AVST 211  
Provides flight simulator and ground training to develop student’s skills in IFR navigation and ATC procedures in terminal environment. Course intended to be taken concurrently with AVFT 202. Simulator used is GAT-1 (or other approved simulator).

AVST 213  Flight Simulator III  
Term Prerequisite: AFT 150  
Semester Prerequisite: AVGS 211, AVST 212  
Provides flight simulator and ground training to further develop student’s skills at IFR navigation and ATC procedures in en route and terminal environment. Course intended to be taken concurrently with AVFT 203. Simulator used is GAT-1 (or other approved simulator).

AVST 214  Flight Simulator IV  
Term Prerequisite: AFT 150  
Semester Prerequisite: AVGS 211, AVST 213  
Provides flight simulator and ground training to develop student’s skills at level of instrument rating practical test standards. Student will perform simulator flights in en route and terminal environment including compliance with emergency procedures. Course intended to be taken concurrently with AVFT 204. Simulator used is GAT-1 (or other approved simulator).

AVST 215  Multi-Engine Flight Simulator  
Term Prerequisite: AFT 215  
Semester Prerequisite: AVST 214  
Provides flight simulator training culminating in aeronautical knowledge and maneuvering skills in support of advanced visual and instrument flight training in multi-engine aircraft. Intended for the flight Time multi-engine simulator.

BDCS 201  Starting a Business  
Term Prerequisite: None  
Semester Prerequisite: None  
Entrepreneurs are usually required to wear many “hats” and may have no idea what skills and processes are involved in starting and operating a business. If you own or are considering owning a business, this class can help you find assistance to begin and maintain a business.

BDCS 202  Pitfalls to Avoid When Opening or Operating a Business  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar, presented by a successful business person, can save you both problems and money. What to avoid! What to look out for! Where to seek help! Where not to cut costs! How to help ensure your chances of a successful business venture! Come and learn from those who have.

BDCS 205  Systems for Record Keeping  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar increases the participants’ working knowledge of the accounting process and the maintenance of accounting records, ledgers, and income statements, and the preparation for income tax time.

BDCS 206  Legal Considerations for Small Business  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar will familiarize participants with the legal considerations of business formation, consumer protection, employee relations, competition, and benefit packages.

BDCS 208  Financial Management for Small Business  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar offers practical presentation, application, and practice of basic financial management techniques, such as analyzing and applying information from balance sheets, income statement, and cash flow statements.

BDCS 210  Customer Relations  
Term Prerequisite: None  
Semester Prerequisite: None  
Anyone who sells, gives or provides services to customers can discover new ways for creating good customer relations. By communicating effectively, understanding customer personalities and how to deal with them, and assessing their own motivation and esteem needs, participants can serve their customers in a positive manner.

BDCS 211  Advertising for Small Business  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar is designed for salespeople who have attained the level of professional selling. They must increase knowledge, develop new techniques, and recognize and deal with obstacles. The seminar will help participants recognize how they achieved success, how to maintain status, and how to identify and use tools to continue their success.

BDCS 213  How to Staff Your Small Business  
Term Prerequisite: None  
Semester Prerequisite: None  
A seminar to familiarize the participants with aspects of employment procedures including interviewing, evaluating, and the law.

BDCS 214  Retail Selling for Small Business  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar assists the student to understand the importance of the salesperson to the business and give the participants a chance to review, update, and add to their selling skills.

BDCS 215  Developing a Marketing Plan  
Term Prerequisite: None  
Semester Prerequisite: None  
This seminar familiarizes participants with marketing and provides an opportunity to write a marketing plan. Participants will learn to use a six-step process that involves obtaining data, developing the plan, and analyzing the results.

BDCS 216  Global Exporting  
Term Prerequisite: None  
Semester Prerequisite: None  
Exporting is an endeavor for the patient and the strong of heart. It can result in opening new markets, increase company growth and profits, and contribute to the growth of the U.S. gross national product. The business person must anticipate the risks and opportunities of exporting and apprise themselves of risks and opportunities of the resources available to help them make informed decisions about whether to export their products and services.

BDCS 217  Computers for Small Business  
Term Prerequisite: None  
Semester Prerequisite: None  
In this seminar, participants will learn the fundamentals of selecting and using computers in the small environment.

BDCS 220  Business: The Planning Process  
Term Prerequisite: None  
Semester Prerequisite: None  
In this seminar, participants will learn to use their business plan as an ongoing management tool to reduce risk and enhance chances for success. It includes the use of small computers to assist in the process.
BDCS 223 Franchising/Evaluating and Buying a Business
Term Prerequisite: None
Semester Prerequisite: None
This program will familiarize the participants with the statistics needed, legalities involved, and the evaluation of the best seller’s book in order to determine the business’ worth. It will also acquaint participants with the considerations and background information needed to buy a franchise.

BDCS 225 Writing a Business Plan
Term Prerequisite: None
Semester Prerequisite: None
Participants can expect to become familiar with business planning and how to develop and maintain a business plan. Most creditors require a business plan before reviewing a loan application. Be prepared. Write your business plan with the information provided at this seminar.

BDCS 230 Small Business Taxes
Term Prerequisite: None
Semester Prerequisite: None
Federal, state and local governments assess a variety of taxes on business. This seminar will identify the various taxes which pertain to small businesses in Michigan and provide information on the tax returns used and filing responsibilities of the business.

BIOL 121 Biology
Term Prerequisite: 2.0 Minimum in CEM 110/Equivalent Semester Prerequisite: Chemistry Recommended
Topics include biological molecules, cell structure and function, the passage of materials across cell membranes, cell respiration, mitosis, meiosis, introductory genetics, and the relationship between DNA, RNA, and protein synthesis.

BIOL 123 Seminar: Human Nutrition
Term Prerequisite: Biology Recommended Semester Prerequisite: Biology Recommended
An introductory course in human nutrition. Topics include the role of nutrients; digestion, absorption and metabolism of nutrients; role of vitamins and minerals; and the introduction of current and controversial topics when relevant. Such topics can include fast diets, obesity, nutrition of athletes, food labels, alcohol, sugar, and food additives.

BIOL 127 Cell Biology
Term Prerequisite: CEM 110/High School Chemistry Semester Prerequisite: CHEM 125/High School Chemistry
First of two biology courses for science majors. Lectures topics include chemistry of carbohydrates, lipids and proteins; structure and function of prokaryotic and eukaryotic cells; biochemistry of respiration; genetics and the regulation of gene expression. Laboratory stresses techniques of cell and molecular biology as well as genetics.

BIOL 128 Organismal Biology
Term Prerequisite: None Semester Prerequisite: None
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.

BIOL 201 Zoology I
Term Prerequisite: None Semester Prerequisite: None
Introduces characteristics of animal life. Includes chemical and physical aspects of life, cellular structures and their functions, cell division, introduction to histology and study of the integumentary, skeletal, muscular, digestive, respiratory, urinary, circulatory, nervous, endocrine and reproductive systems. Emphasis is on the vertebrates, principally the mammals.

BIOL 202 Zoology II
Term Prerequisite: 2.0 Minimum in BIO 201/Departmental Approval Semester Prerequisite: 2.0 Minimum in BIO 201
Begins with an introduction to heredity, population genetics, the theory of evolution and ecology. Deals principally with the taxonomy and comparative anatomy of members found within the major animal phyla. A phylogenetic approach is used to study the various animal phyla from Prototrooa through Chordata.

BIOL 210 Natural Resource Conservation
Term Prerequisite: None Semester Prerequisite: None
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.

BIOL 250 Entomology
Term Prerequisite: None Semester Prerequisite: None
An introduction to the study of insect biology, including morphology, development, life cycles, behavior, and ecology. Control techniques of medical, agricultural, and household pests will be covered, as will the characteristics of social and aquatic insect communities. Laboratory and field work will emphasize identification of common Michigan insects.

BIOL 260 Botany
Term Prerequisite: 1 Term of Biology Recommended Semester Prerequisite: 1 Semester of Biology Recommended
An introduction to the study of plants that includes structure and function, development, and systematics. 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.

BIOL 270 Human Genetics
Term Prerequisite: BIO 101/Equivalent Semester Prerequisite: BIO 121/Equivalent
Presents general principles of genetics with specific human application. Topics include: Mendelian genetics, linkage and mapping, chromosome structure and aberrations, sex determination and X-linkage, molecular basis of inheritance, gene mutations, genetics of immune system, cancer genes, recombinant DNA technology, and genetic screening and counseling.

BIOL 275 Molecular Biology I
Term Prerequisite: BIO 274 Semester Prerequisite: BIO 127/Departmental Approval
Introduces basic principles of molecular biology, DNA/RNA structure and function, gene regulation, and recombinant DNA technology. Laboratory emphasizes reagent preparation, culturing bacteria, isolating and purifying plasmid DNA from bacteria, restriction enzyme digests of DNA, and agarose gel electrophoresis.

BIOL 276 Molecular Biology II
Term Prerequisite: 2.0 Minimum in BIO 275 Semester Prerequisite: 2.0 Minimum in BIO 275
Continuation of BIO 275. Advanced lecture topics in bacteriological, gene analysis, gene sequencing, and research applications of gene cloning. Gene experiments with M-13 bacteriophage and PVC plasmid vectors, site-specific mutagenesis, and DNA blotting and hybridization techniques.

BLDR 101 Basic Woodworking
Term Prerequisite: None Semester Prerequisite: None
This course covers the selection, use, and maintenance of tools used by the woodworker working by hand. It examines the tradition of hand tools as it relates to woodworking today. Students learn how to sharpen and maintain tools and how to select tools for special purposes.

BLDR 103 Woodworking with a Router
Term Prerequisite: BR 101 Semester Prerequisite: BLDR 101
This is an exploration of router applications and router techniques. Student projects are used to illustrate and demonstrate dovetail joints, decorative cuts, dadoes, rabits, mortises and similar styles, design and construction of jigs and fixtures for special applications. The students furnish their own lumber for projects.

BLDR 106 Furniture Making
Term Prerequisite: BR 101 Semester Prerequisite: BLDR 101
Design and construction of simple furniture, with emphasis on selection of materials, options in join and fastening methods, construction techniques, assembly procedures and problem-solving.

BLDR 109 Build Your Own Cabinets
Term Prerequisite: BR 101 Semester Prerequisite: BLDR 101
This course offers a hands-on experience in building vanity's, base cabinets, and wall cabinets. It also covers the use of tools and machines, cabinet construction, drawer construction, door style options, and forming work. Students supply their own lumber.
BLDR 110 Wood Projects
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This course provides additional lab hours and individual instruction for students enrolled in Building Related and Building Trades courses, with requirements for construction of a term project.

BLDR 122 Furniture Finishing, Antiquing and Refinishing
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to give the craftsmen a basic knowledge of the furniture finishing process. The course includes sealing, staining, tinting, spray and brush application, removal of old finishes, minor repairs, selection of new finish, and surface preparation. Students bring their own projects.

BLDR 124 Paperhanging
Term Prerequisite: None
Semester Prerequisite: None
This course covers the preparation of surfaces, selection and care of tools, selection of materials and adhesives, estimating materials, layout, avoiding and correcting faults, and applications of paper and vinyl.

BLDR 132 General Home Maintenance
Term Prerequisite: None
Semester Prerequisite: None
This is an introductory course in general home maintenance. Topics include furnace maintenance, humidifiers, painting, hot water heaters, basic plumbing, and electrical repairs.

BLDR 134 Masonry Home Projects
Term Prerequisite: None
Semester Prerequisite: None
This course shows how to build home masonry projects to include barbecues, patios, and laying masonry units through hands-on work.

BLDR 142 Build Your Own Patio Deck
Term Prerequisite: None
Semester Prerequisite: None
Plan, estimate, lay out, and build your own patio floor or off-the-ground deck. Investigate materials, designs, structural considerations, and costs. The course will include tips and techniques for getting the job done.

BLDR 144 Build Your Own Home
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for students who wish to build their own homes. Included are design considerations, land acquisition, selection of materials, choosing contractors, scheduling, financing, and landscaping. Guest speakers, who are experts in their various fields, provide the instruction.

BLDT 100 Introduction to Construction
Term Prerequisite: None
Semester 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.

BLDT 103 Structural Print Reading
Term Prerequisite: Departmental Approval
Semester Prerequisite: ARCH 100
This course covers symbols, conventions and abbreviations used in structural blueprints. The students will be able to recognize conventions and verbally describe their interpretation in trade or lay terms, according to standard architectural practices. Residential and commercial prints are used to show the relationship between working drawings and specifications.

BLDT 121 Residential Framing and Foundations
Term Prerequisite: None
Semester Prerequisite: None
Students will learn to frame residential buildings using accepted framing techniques, such as framing member spacing, framing floor systems, interior and exterior walls, and creating rough openings. This course covers the various types of foundations and the advantages and disadvantages of each. Hands-on methods are used.

BLDT 124 Remodeling, Shingling and Siding
Term Prerequisite: BT 121
Semester Prerequisite: BLDT 121
Students will learn to remodel, shingle and side a residential building. This course covers the analysis, designing, estimating, problem-solving, building practices, materials, and installation methods for remodeling, roofing, and exterior wall covering projects.

BLDT 126 Interior Carpentry
Term Prerequisite: BT 121
Semester Prerequisite: BLDT 121
Students will learn to finish the interior of a residential building. This course covers the materials, installation practices, and material takeoff to do the finish carpentry for a house to include windows, doors, base, chair rail, wood floors, stairs, simple built-ins, and cabinets.

BLDT 262 Builders Business License
Term Prerequisite: None
Semester Prerequisite: None
This course covers the principles of residential builder organizations and business practices, along with other useful information to help students pass the State of Michigan Builders License Exam. Preparation for a residential project from planning to actual construction and sale of the project is covered.

BLDT 277 Construction Cost Estimating
Term Prerequisite: BT 103
Semester Prerequisite: BLDT 103
Students will learn to do a structural material takeoff and a complete estimate for residential and light commercial buildings. The course uses standard estimating practices to estimate the cost of buildings, based on detailed blueprints.

BLDT 281 BOCA/Uniform Code
Term Prerequisite: None
Semester Prerequisite: None
Students will be introduced to the two most commonly used building codes in the United States. This course will emphasize the use, interpretation, and application of the Uniform and BOCA Building Codes. Requirements for materials, barrier-free design, and fire standards for residential and commercial construction will be emphasized.

BLDT 287 Residence Construction I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Instructor Approval
Students will study and construct a residential building. All aspects of residential construction will be covered to include purchase of land, design, financing, purchase of materials, contacting sub-contractors, hands-on building techniques, sales, and landscaping. Participation implies enrollment in BLDT 288. Class meets 20 hours per week.

BLDT 288 Residence Construction II
Term Prerequisite: BT 123
Semester Prerequisite: BLDT 287
Students will study and construct a residential building. All aspects of residential construction will be covered to include purchase of land, design, financing, purchase of materials, contacting sub-contractors, hands-on building techniques, sales, and landscaping.

BLDT 296 Ceramic Tile Seminar
Term Prerequisite: None
Semester Prerequisite: None
This seminar will teach the basic principles of 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.

BLDT 298 Builders License Review
Term Prerequisite: None
Semester Prerequisite: None
This is a two-day workshop designed to prepare individuals for the State of Michigan Residential Builder's Examination. This workshop will include concentrated instruction in blueprint reading, state regulations, building terms, basic math and construction codes.

BUSN 118 Introduction to Business
Term Prerequisite: None
Semester Prerequisite: None
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.

BUSN 123 Principles of Association Management
Term Prerequisite: None
Semester Prerequisite: None
An introductory course designed to provide an overview of the principles involved in managing non-profit associations and organizations. It will enable the student to understand the interrelationships between associations, business, government, and society.

BUSN 125 Written Communication for Business
Term Prerequisite: None
Semester Prerequisite: None
A course on how to write clearly, accurately, and quickly. Students will develop the skill of organizing their writing for the busy reader's needs by practicing writing letters, reports, memos and procedures—technical or non-technical in nature.
BUSN 191 Independent Study in Management
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students are allowed to undertake special research projects and/or individual readings to apply personal and professional experience to academic area of interest. Minimum of 16 hours work required, plus completion of written project report.

BUSN 192 Independent Study in Management
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students are allowed to undertake special research projects and/or individual readings to apply personal and professional experience to academic area of interest. Minimum of 32 hours work required, plus completion of written project report.

BUSN 193 Independent Study in Management
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students are allowed to undertake special research projects and/or individual readings to apply personal and professional experience to academic area of interest. Minimum of 48 hours work required, plus completion of written project report.

BUSN 201 International Business
Term Prerequisite: BUS 118/Equivalent
Semester Prerequisite: BUS 118/Equivalent
Overview of international business: organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import quotas and export controls, balance of payments, and free trade versus protectionism.

BUSN 229 Public Relations
Term Prerequisite: None
Semester Prerequisite: None
Students will be introduced 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.

BUSN 230 Oral Communications for Business
Term Prerequisite: None
Semester Prerequisite: None
Techniques of public speaking, examining the speaker, the audience, and the text from a business viewpoint. Also studying issues and potential problems pertaining to listening, persuasion, interpersonal and nonverbal communication. Students will practice and develop practical "stand up" presentation skills appropriate for a business setting.

BUSN 250 Personal Finance
Term Prerequisite: None
Semester Prerequisite: None
Students will undertake a broad survey of topics including budgeting, smart shopping, buying a car, renting, buying or selling a home, credit requirements, investing, insurance, and estate and retirement planning. Not intended to be a financial planning course, but students will develop a fundamental knowledge of financial concerns.

BUSN 251 Stock Market Essentials
Term Prerequisite: None
Semester Prerequisite: None
Study of securities market to give framework with which to set investment goals and achieve desired results. Introduction to some of the more prevalent theories, concepts, and skills to aid in developing strategies and making sound investment decisions related to the stock market.

BUSN 252 Personal Financial Planning
Term Prerequisite: None
Semester Prerequisite: None
This course provides students with practical information to guide personal financial decisions. It is designed to facilitate learning the process of financial planning to help students make informed choices about financial matters.

BUSN 254 Introduction to Investments
Term Prerequisite: None
Semester Prerequisite: None
This course covers the fundamental principles of investing and its role in our economy. Emphasis will be on developing terminology, types of investments, and personal financial planning such as mutual funds, real estate, CDs, money market funds, limited partnerships, insurance, IRAs, stock, and tax shelters. This is an overview course.

BUSN 255 Advanced Investments
Term Prerequisite: BUS 254
Semester Prerequisite: BUS 254
Students will use their knowledge of investment options to develop and implement a personal investment strategy. Investment objectives and influencing factors will be examined.

BUSN 270 Updating Employee Policies—A Legal Perspective
Term Prerequisite: None
Semester Prerequisite: None
This seminar provides a comprehensive review of recent developments in employment laws and court decisions which impact employer policies and employee handbooks. Topics will include employment at will and just cause standards, EEO/AA policies, handicap accommodations, wage and hour rules, work rules, and benefits.

BUSN 271 A New Look at Employee Involvement
Term Prerequisite: None
Semester Prerequisite: None
Employee attitudes and working conditions in today's workplaces are discussed with an overview of participatory approaches which have seen short-lived success and widespread failure. Key elements of effective approaches to employee involvement and democratization of the workplace are presented, including concepts that may shape the workplace of the nineties.

BUSN 272 Providing Excellent Customer Service
Term Prerequisite: None
Semester Prerequisite: None
Focuses on developing skills in employees who have direct customer contact. Targeted at organizations committed to empowering employees with the skills to deliver excellent service. Topics include understanding the importance of service excellence, understanding behavioral differences in people, and handling customer interactions, particularly conflict situations, in a professional, win/win manner.

BUSN 295 Entrepreneurship
Term Prerequisite: None
Semester Prerequisite: None
A survey of small-business operations to help aspiring business owners understand the nature and responsibilities of running a "going concern." Topics include marketing, finance, management, legal obligations, and the small-business environment.

BUSN 296 Writing a Business Plan
Term Prerequisite: Departmental Approval
Semester Prerequisite: BUSN 295/Departmental Approval
Practical application of small-business management principles. Students will develop a business plan for a small business of their choice. This class is designed for students with the desire to actually own and operate a business of their own.

CABS 100 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
This series of seminars provides the successful participant with operational proficiency in using specific microcomputer software. The seminars also provide the students with some experience using commands, functions, and features of the software beyond the basic level. Extensive hands-on activity is the primary method used in learning.

CABS 102 Microcomputers for Non-Majors
Term Prerequisite: None
Semester Prerequisite: None
Surveys concepts and uses of software applications: word processors, spreadsheets, and database managers. Terminology, problem-solving, and acquisition factors associated with personal computers are discussed. Hands-on computer use.

CABS 114 WordPerfect - Beginning
Term Prerequisite: Keyboard Familiarity
Semester Prerequisite: Keyboard Familiarity
Beginner-level instruction on use of WordPerfect. Topics include creating, editing, formatting, and storing word processing documents. Also learned are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and maintaining lists. Extensive hands-on activity.

CABS 115 WordPerfect - Advanced
Term Prerequisite: CABS 114
Semester Prerequisite: CABS 114
Instruction in the use of WordPerfect features such as macros, tables, columns, footnotes and endnotes, indexes, lists, table of contents, outline, boxes, graphics, and fonts. Includes techniques for improving the appearance of documents produced through use of appropriate fonts and other print capabilities.
CABS 116 WordPerfect - Advanced Format  
Term Prerequisite: CAB 114  
Semester Prerequisite: CABS 114

This course is designed to provide the person new to WordPerfect with the ability to perform most of the word-processing functions. The course also covers less frequently used features, such as performing mail merge and creating tables.

CABS 119 Word for Windows  
Term Prerequisite: Keyboard Familiarity  
Semester Prerequisite: Keyboard Familiarity

This course is designed to provide the person new to Word for Windows with the ability to perform most of the word-processing functions. The course also covers less frequently used features, such as performing mail merge and creating tables.

CABS 122 Lotus 123 Self Taught  
Term Prerequisite: None  
Semester Prerequisite: None

An introduction to using the Lotus 1-2-3 spreadsheet, graphics, and database management program. The course uses a variety of teaching techniques such as videotape and computer-assisted instruction. Provides hands-on experience in creating spreadsheets, producing graphs and reports, and searching and sorting databases.

CABS 123 Lotus 123  
Term Prerequisite: None  
Semester Prerequisite: None

This course is designed to provide the person new to Lotus with the ability to perform most of the database management functions. The course also covers less frequently used features, such as sorting data and creating reports.

CABS 124 Advanced Lotus Release 2  
Term Prerequisite: CABS 123  
Semester Prerequisite: CABS 122/CABS 123

Expands the students' working knowledge of Lotus 1-2-3 by providing experience in applying advanced features of the program to routine business problems. Topics include an in-depth study of macros, database management, graphs and charts, data tables, user defined menus, and custom help screens. Uses release 2 of Lotus 1-2-3.

CABS 125 Advanced Lotus Release 3  
Term Prerequisite: CABS 123  
Semester Prerequisite: CABS 122/CABS 123

Expands the students' working knowledge of Lotus 1-2-3 by providing experience in applying advanced features of the program to routine business problems. Topics include an in-depth study of macros, database management, graphs and charts, data tables, user defined menus, and custom help screens. Uses release 3 of Lotus 1-2-3.

CABS 126 Excel  
Term Prerequisite: None  
Semester Prerequisite: None

This course is designed to provide the person new to Excel with the ability to perform most of the spreadsheet and database management functions. The course also covers less frequently used features, such as sorting data and creating reports.

CABS 130 dBASE for Non-Majors  
Term Prerequisite: None  
Semester Prerequisite: None

This course is designed for the person who uses an existing dBASE program or who needs to develop a simple database. Students learn how to create database structures, enter and edit data, manipulate data, and prepare printed reports. The programming mode is not addressed in this course.

CABS 136 SQL: Structured Query Language  
Term Prerequisite: None  
Semester Prerequisite: None

This course covers the relational database language SQL. Topics include table definition, queries, special operators, the join operation, views, security, administration, and reports. A commercial SQL product is used to provide students with hands-on experience.

CABS 140 Business Graphics Using Harvard Graphics  
Term Prerequisite: None  
Semester Prerequisite: None

This course is designed to provide the person new to Harvard Graphics with the ability to create and present information in a graphic form. Students learn how to create and manipulate data using Harvard Graphics software to produce and present information.
CHCE 107 Community Resources for Health Professionals .75
Term Prerequisite: None
Semester Prerequisite: None
A course designed to help health care professionals identify and utilize community resources for their client population. Material will be presented through lectures by representatives of various local health-care providers for clients and/or families.

CHCE 108 Medical Emergencies in the Dental Office .5
Term Prerequisite: Dental Professional Staff
Semester Prerequisite: Dental Professional Staff
Covers common medical emergencies that may occur in the dental office and treatment for such emergencies. Instruction in taking a blood pressure, clearing airways, evaluating medical histories and emergency kits is given. Discussion includes caring for medically compromised dental patients and formulating an office emergency plan.

CHCE 112 Dental Auxiliary X ray 1.5
Term Prerequisite: Dental Auxiliary
Semester Prerequisite: Dental Auxiliary with One Year Experience/Departmental Approval
This course is designed for the dental auxiliary to update his/her skills and gain knowledge in making intraoral radiographs of diagnostic quality. Includes theory and laboratory sessions in exposing, processing, mounting, and evaluation of radiographs. Upon successful completion, the student receives a certificate of completion.

CHCE 114 Physical Assessment Skills for Nursing Practice 2.5
Term Prerequisite: RN/LPN/Nurse
Semester Prerequisite: RN/LPN/Nurse
This course is designed for nurses in any area of practice. Emphasis is on techniques of physical examination: inspection, palpation, percussion, and auscultation. History taking and interpretation of physical findings are stressed. All major body systems are studied. Live models are used in supervised practice sessions. All equipment supplied.

CHCE 115 Physical Assessment Refresher .75
Term Prerequisite: CHCE 114/Equivalent
Semester Prerequisite: CHCE 114/Equivalent
This seminar is designed for students who have already had formal training in physical examination skills. Course content is designed to help students recall important signs of pathology and normal physical findings. There is also ample opportunity, through supervised practice sessions, to improve specific techniques of physical examination.

CHCE 117 Physical Assessment Techniques for the Corrections Nurse 2.75
Term Prerequisite: Corrections Nurse/EMT
Semester Prerequisite: Corrections Nurse/EMT
This course is designed for and restricted to Nurses/EMTs currently employed by Michigan Department of Corrections. Physical exam skills are studied and extensively practiced with special attention to modifications required in the corrections setting. Live models are used. Common pathological findings are emphasized. All equipment supplied.

CHCE 119 Ventilation Care for Long-Term Care Patients 1.75
Term Prerequisite: RN/LPN
Semester Prerequisite: RN/LPN
This course is designed to educate the RN or LPN in patient care skills required to safely care for patients needing long-term ventilator support. A clinical component is included.

CHCE 127 Physical Assessment for Community Mental Health Nurses 1.5
Term Prerequisite: FIN Community Mental Health
Semester Prerequisite: Developmentally Disabled/Community Health Nurse
Course content is specific for nurses working with the developmentally disabled and emotionally disturbed/elderly client in the community health setting. Physical exam techniques are learned and then modified for the problem situations encountered in community health settings. Emphasis is on detection of abnormal findings in major body systems.

CHCE 182 Acute Trauma/Emergency Nursing Seminar 2
Term Prerequisite: RN/Allied Health
Semester Prerequisite: RN/LPN/EMT/AEMT
Nurses and pre-hospital personnel will increase their knowledge of acute trauma and medical emergencies. Lecture, demonstrations, and simulated emergency practice sessions are all used to assist students in assessing, prioritizing, and providing emergency care in a safe, organized manner. Chest, abdomen, burns, face, extremities, and neuro trauma are included.
CHCE 185-CHCE 228

CHCE 185 Lab Tests for Nurses .5
Term Prerequisite: None
Semester Prerequisite: None
A seminar for nurses and other health-care personnel. Seminar content focuses on the systematic disease processes of specific lab tests, interpretation of test values, and application to practice. Mock lab reports and case study situations are used.

CHCE 190 Pharmacology Meth .1
Term Prerequisite: Allied Health Professional
Semester Prerequisite: Allied Health Professional
This course is designed for the registered nurse, licensed practical nurse, student of a nursing curriculum, pharmacy technician, and medical assistant. Its primary goal is to provide the student with a review of mathematics and a simplified method of calculating drug dosages in adult and pediatric patients.

CHCE 193 Basic Cardiac Technician .2
Term Prerequisite: RNLPN/NTech
Semester Prerequisite: Developmental Approval
This course offers an introduction to cardiac arrhythmia. The content includes interpretation of cardiac monitors, understanding basic cardiac anatomy and physiology, and an introduction to 12 lead EKG machine and Holter monitor.

CHCE 194 Mental Health Nursing Seminar 1.5
Term Prerequisite: Registered Nurse
Semester Prerequisite: Registered Nurse
This course is designed for registered nurses currently working with or who will work with clients with emotional problems. Students are taught the content for a mental status assessment, therapeutic communication techniques, psychotropic medications, patient teaching techniques, nursing interventions, and the evaluation of client progress.

CHCE 195 Effective Interaction and Problem-Solving Techniques .5
Term Prerequisite: RN/LPN/Allied Health
Semester Prerequisite: RN/LPN/Allied Health
This seminar stresses application of assertive communication skills. Personality and temperament styles are identified which determine conflict resolution, value clarification, and confrontation skills. Real and theoretical work situations are stressed to assist in effective problem-solving techniques.

CHCE 198 Geriatric Nursing Seminar .5
Term Prerequisite: RN/LPN
Semester Prerequisite: Nurse (RN/LPN/GNSN)
This focused seminar is designed specifically for the nurse working in long-term care facilities. The student investigates concepts of nursing leadership and applies them to his/her own work environment. Issues of staff morale, staff turnover, realistic changes within economic and organization limitations are discussed.

CHCE 200 Managing Aggressive Behavior 1
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for staff working where the potential for aggressive behavior exists. Michigan's mental health code is used as a basis for course content which includes cues to emotional crisis, causes for aggressive behavior, de-escalating techniques, self-protective maneuvers, and non-offensive physical controls. Practice sessions are included.

CHCE 202 Advanced Nursing Practice Seminar: Medical-Surgical Nursing 3
Term Prerequisite: RN/LPN/GN
Semester Prerequisite: RN/LPN/GN
This specialty course is designed to enhance nurses' knowledge of medical-surgical practices. Content focuses on patient assessment, current treatment modalities, and pharmacology. Specialized monitoring and treatment equipment or procedures are included where applicable. Important types of pathology and dysfunctional states are included with emphasis on the nursing management.

CHCE 203 Oncology Nursing Practice 3
Term Prerequisite: RN/LPN/GN
Semester Prerequisite: RN/LPN/GN
A specialized course for nurses pursuing a position in oncology or for those seeking professional growth. Course content includes the diagnosis and pathophysiology of cancer; principles of radiation, chemotherapy and surgical treatment, oncologic complications with related management, emotional adjustment issues, and bereavement. Strong emphasis on nursing care.

CHCE 204 Essentials of Home Health Nursing Practice 3
Term Prerequisite: RN/LPN/GN
Semester Prerequisite: RN/LPN/GN
This course helps prepare nurses for work in home health care. Course content is extensive, including information about Medicare/Medicaid, D Payne plans, charting, patient assessment, personal safety, infection control, and effective communication. Cultural values affecting delivery of care, appropriate referrals, supervision, and planning effective home visits are also emphasized.

CHCE 205 Intravenous Therapy .5
Term Prerequisite: Nurse, Health Care Professional
Semester Prerequisite: Nurse, Health Care Professional
A specialty seminar for nurses and other health care professionals caring for clients receiving intravenous therapy in the home, acute care, or extended care settings. Content includes explanation of safe IV therapy, specialty solutions, infusion devices, site selection, and practice.

CHCE 208 Clinical Practicum for Professional Nurses 1
Term Prerequisite: RNL/PN/GN
Semester Prerequisite: RNL/PN/GN
This practicum is designed for nurses requiring supervised clinical practice as part of their advanced study. A variety of clinical settings are used, including acute care, clinics, home care, and treatment centers. This course is most appropriate in conjunction with one of the advanced nursing practice courses/seminars.

CHCE 210 Pediatric Advanced Life Support 1.5
Term Prerequisite: Basic Cardiac Life Support Certification/Health Professional
Semester Prerequisite: Basic Cardiac Life Support Certification/Health Professional
This seminar is designed for members of the health-care team who work with pediatric patients. A combination of lecture and practice in skills stations will prepare the student for success in achieving American Heart Association certification as a Pediatric Advanced Life Support Provider. Prior assigned reading mandatory.

CHCE 211 Pediatric Advanced Life Support(PALS) Recertification .75
Term Prerequisite: Basic Cardiac Life Support, Pediatric Advanced Life Support Certification
Semester Prerequisite: Basic Cardiac Life Support, Pediatric Advanced Life Support Certification
This seminar is designed to recertiify, according to the American Heart Association (AHA) standards, those professionals currently possessing valid Pediatric Advanced Life Support (PALS) certification cards. Upon successful recertification, the AHA will issue each student a new PALS certification card. Prior assigned readings are mandatory.

CHCE 215 Pediatric Physical Assessment 2.5
Term Prerequisite: RNLPN
Semester Prerequisite: RNLPN
Course content is designed for any nurse working with children. Students learn norms for stages of physical development and typical physical findings for each body system. Nurses learn to administer the physical exam to the age, behavior, and acuity of the child.

CHCE 218 Nursing Licensure Exam Preparation for RN-NCLEX and NLN Exams 2.25
Term Prerequisite: Graduate Nurse. Diploma/ADN/BSN
Semester Prerequisite: Graduate Nurse. Diploma/ADN/BSN
This review course helps the graduate nurse organize and study important nursing care topics by specialty: obstetrics, medical-surgical, pediatric and psychiatric nursing, nursing management, patient care decisions, treatment protocols, patient teaching, pharmacology, nutrition, and test-taking strategies are included. Students take mock exam and multiple practice tests.

CHCE 222 Essentials of Emergency/Critical Care/ Specialty Care Nursing 6
Term Prerequisite: RN/LPN/GN/AEMT
Semester Prerequisite: RN/LPN/GN/AEMT
This course embodies intensive education and training for nurses preparing to work in the acute specialty care setting. Physical assessment, recognition, and management of trauma and critical dysfunctional conditions are emphasized. Pharmacology, patient monitoring, and critical decision-making in simulations are included. Take concurrently with CHCE 206.

CHCE 227 New Dimensions in Nursing 5
Term Prerequisite: Nurse
Semester Prerequisite: Nurse (RN/LPN/GN/SN)
This is a concentrated update seminar for both active/inactive nurses. Seminar topics are selected for relevance to current nursing practice with the focus on new health care trends, treatment and diagnostic measures, patient management issues, and nursing practice issues.

CHCE 228 Nursing Management Strategies 2
Term Prerequisite: Health Professional
Semester Prerequisite: Health Professional
This course provides an overview of the management function in a health-care setting. It is based on a conceptual understanding of the management functions of planning, organizing, leading, controlling, and dealing with change. Emphasis will be on developing practical skills needed to manage resources and set realistic goals.
CHCE 229 Nursing Practice Update Seminar .75
Term Prerequisite: RN/LPN/Health Professional
Semester Prerequisite: RN/LPN/Health Professional
Seminar topics are selected from current medical literature and/or prevailing community needs. Trends and issues in nursing, patient care advances and dilemmas, diagnostic and treatment protocols, medical-legal-ethical considerations and professional nursing concepts all form the basis for final topic selection. Specialized faculty participate in areas of their expertise.

CHCE 230 Advanced Cardiac Life Support 2.25
Term Prerequisite: Departmental Approval
Semester Prerequisite: Basic Cardiac Life Support Certification/Health Professional/Departmental Approval
This seminar is designed for members of the health care team to develop knowledge and skills in Advanced Cardiac Life Support (ACLS). A combination of lecture and skills performance will prepare the student to achieve success in American Heart Association certification as an ACLS provider. Pre-preparation mandatory.

CHCE 234 Mental Health Update .75
Term Prerequisite: Nurse
Semester Prerequisite: Nurse
This seminar is for health-care personnel with the need to practice and expand their skills in working with the mentally ill. Content will focus on those areas prioritized by the contracting agency. Various teaching, learning, and testing techniques will be utilized: lecture, role-playing, audio-visual, case studies, and written quizzes.

CHCE 235 Advanced Cardiac Life Support Recertification .75
Term Prerequisite: Advanced Cardiac Life Support Certification
Semester Prerequisite: Basic Cardiac Life Support, Advanced Cardiac Life Support Certificate
This seminar is designed to recertify, according to the American Heart Association standards, those individuals currently possessing valid Advanced Cardiac Life Support (ACLS) cards. The American Heart Association will issue a certificate to each student upon successful completion of the program. Prior assigned readings are mandatory.

CHCE 239 Emergency/Trauma/Update and Review 1.5
Term Prerequisite: RN/LPN Emergency Care Nurse
Semester Prerequisite: RN/LPN Emergency Care Nurse
This course is designed for nurses working in the specialty field of Emergency/Trauma Care. It may be used as an update in the current status of emergency/trayma nursing or as an adjunct in helping the emergency nurse prepare for the certification exam.

CHCE 244 Hospice Administration I: Quality Assurance 2
Term Prerequisite: Hospice Administrator
Semester Prerequisite: Hospice Administrator
This course combines current theory on quality assurance with application of concepts to hospice programs in all stages of development. A program evaluation will also be completed.

CHCE 245 Hospice Administration II: Leadership and Management 3
Term Prerequisite: Hospice Administrator
Semester Prerequisite: Hospice Administrator
This course uses the hospice management model for the planning, organization and direction of hospice services to a community. The student will develop skills for sound personnel staffing to meet hospice needs. Included is an assignment to develop a fiscal management model to be used specific to a hospice setting.

CHCE 246 Hospice Administration III: Leadership/Public Relations 3
Term Prerequisite: Hospice Administrator
Semester Prerequisite: Hospice Administrator
Specifics covered in this course are planning and conducting family-patient conferences, doing a market survey of community needs for hospice services, identifying resources and support for hospice services, and working with local hospice boards.

CHCE 247 Techniques Update Course for RDAs .25
Term Prerequisite: Current Dental Hygiene License in Michigan/Current Dental License
Semester Prerequisite: Dentist/Dental Hygiene
This course is designed for the Dental Hygienist/Dentist who wishes the opportunity to gain knowledge and develop the skills needed to perform advanced clinical procedures.

CHCE 250 Patient Dental Anxieties/Pain Control .5
Term Prerequisite: Dental Professional
Semester Prerequisite: Dental Professionals
This seminar will provide dental professionals with the knowledge and skills to successfully treat the difficult and anxious dental patient.

CHCE 253 Dental Team Concepts .75
Term Prerequisite: Dental Office Staff
Semester Prerequisite: Dental Office Staff
This seminar is designed to update and motivate the dental team with current, practical information on "How to be a Successful, Happy Dental Office in the 90's." Topics include utilization of auxiliaries for maximum productivity, effective scheduling, and communication to break barriers.

CHCE 256 New Dimensions in Dental Hygiene .5
Term Prerequisite: Dental Hygienist/Dental Professional
Semester Prerequisite: Dental Hygienist/Dental Professional
An on-going series of day-long seminars designed to update dental hygienists on topics of current interest in the dental field and dental hygiene practice. New products, techniques, knowledge regarding etiology, diagnosis and treatment of periodontal disease, and political issues are an example of topics included.

CHCE 258 Techniques Update Course for RDAs .25
Term Prerequisite: Dental Team
Semester Prerequisite: Dental Assistant/Dentist
This laboratory course is designed for Registered Dental Assistants/Dentists who wish to refresh in RDA functions. Utilization concepts, new procedures, advanced techniques, new products and instruments will be included.

CHCE 259 RDA Update .5
Term Prerequisite: Current RDA License/Licensed Dental Hygienist
Semester Prerequisite: RDA/RD/Dentist
This seminar is designed especially for the Registered Dental Assistant who wishes an update on procedures they can legally perform in Michigan, current issues in the dental field and current issues in dental assisting. Topics may include expanded functions, utilization concepts, and political issues.

CHCE 265 Physical Assessment Skills for Geriatric Nursing 1.75
Term Prerequisite: Nurse
Semester Prerequisite: Nurse (RN/LPN/GN/SN)
This course is designed for nurses working with the elderly client in any setting. Normal age-related physical changes are contrasted with clinical signs of pathologies. Students practice new skills in supervised sessions with live models. There is an emphasis on interpreting important findings and clearly documenting exam data.

CHCE 266 Focal Problems and Patient Care Issues in Geriatric Nursing 1.5
Term Prerequisite: Nurse
Semester Prerequisite: Nurse (RN/LPN/GN/SN)
This specialty course is designed for nurses working with the elderly client in any setting. Common, serious conditions are studied using physical assessment data to identify and document the problem. An overview of normal physical and physiologic changes in the aging client is the framework used to assess abnormal developments.

CHCE 267 Therapeutic Communications .75
Term Prerequisite: Health Professional
Semester Prerequisite: Health Professional
For health professionals with emphasis on the application of communication theory to practice in health care. Communication techniques useful in daily as well as crisis and difficult situations are included. Videotape, film clips, slides, role-playing, and a written assignment are utilized to enhance the student's learning.

CHCE 273 Registered Nurse Critical Care Core Curriculum 3
Term Prerequisite: RN with Experience in Med-Surg Nursing, Good Assessment Skills, Basic Understanding of Anatomy, Physiology
Semester Prerequisite: RN with Med-Surg, Assessment Skills, Good Foundation in Anatomy, Physiology
A course for registered nurses practicing in critical care, preparing to work in critical care and/or considering taking the certification exam. Emphasis placed on the CCN core course content which includes anatomy and physiology, pathophysiology of selected common conditions, related nursing interventions, and medical management.

CHCE 274 Critical Care Registered Nurse Special Equipment 25
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHCE 273
This course emphasizes specific procedural guidelines for use of specialized equipment used to monitor the critically ill adults. Content includes pulmonary, arterial lines, arterial lines, ventilatory management, temporary and permanent pacemakers, and intracranial pressure monitoring.

CHCE 290 TMJ Diagnosis and Management .5
Term Prerequisite: Dental Personnel
Semester Prerequisite: Dental Practitioner
This course focuses on current concepts of diagnosis and management of the TMJ patient. Specifics of a dental office. Topics include growth and development, functional anatomy and pathology, evaluation, treatment modalities and management. Case presentations, demonstrations, and hands-on are included.
CHCE 282 Dental Auxiliary Seminar
Term Prerequisite: RDA/RDH/RDAO/RDM Licensure Candidate
Semester Prerequisite: Dental Auxiliary
This course is designed for the dental auxiliary who wishes to expand his/her skills and knowledge for greater application in a dental office. A variety of topics will be offered. Examples would include photography, dental instrument sharpening, and dental insurance billing.

CHCE 285 Dental Office Infection Control
Term Prerequisite: Dental Personnel
Semester Prerequisite: Dental Professional
Updates dental professionals on effective routine barrier techniques, aseptic procedures, and methods of sterilization to decrease the possibility of transmitting disease and inducing infection. Topics include HIV, AIDS, Viral Hepatitis, HSV, Tuberculosis, Herpes Simplex, and the safe handling and disposal of infectious and hazardous waste.

CHCE 286 Dental Specialty, Focus
Term Prerequisite: Dental Auxiliary
Semester Prerequisite: Dental Professional
This seminar will present the most recent information on a variety of dental specialty topics. The seminar is designed for all members of the dental team. Topics include lasers in dentistry, dental contributions to the forensic sciences, and dentistry for the geriatric dental patient.

CHCE 297 Dental Oral Pathology
Term Prerequisite: Dentist/RDH/RDA
Semester Prerequisite: Dentist/RDH/RDA
Case histories will be presented where the student’s objective is to formulate a differential diagnosis of an unknown oral lesion and propose a rational approach for evaluation and treatment of the patient. Lecture will also include a review of human embryology as it relates to developmental disturbances.

CHCE 299 Advanced Cardiac Life Support (ACLS) Instructor Course
Term Prerequisite: Advanced Cardiac Life Support Provider
Semester Prerequisite: Basic Cardiac Life Support/Advanced Cardiac Life Support Certification
This course will train those health-care professionals who are currently certified in Advanced Cardiac Life Support (ACLS), according to American Heart Association standards, as ACLS instructors. All participants are expected to recently complete their ACLS skills at the time of the course. Prior assigned readings are mandatory.

CHDV 101 Child Growth and Development: 0-5 years
Term Prerequisite: None
Semester Prerequisite: None
This course examines the growth and development patterns of children (conception to 5 years) in physical, social, emotional, cognitive, and language development. Additional topics include nutrition, health, play, families, and the preschool experience. Students acquire skills in observing, recording, and interpreting child behavior. CDA: developmental context; functional area: healthy.

CHDV 111 Positive Guidance and Communication Skills
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHDV 101 Recommended
This course examines interaction skills and environmental structure necessary for fostering social and emotional growth in children of various ages. Topics include: positive guidance and discipline, effective communication with children and adults, in child care, problem-solving, social skill development, group management, aggression prevention. CDA functional areas: self, social, guidance, communication, professionalism.

CHDV 112 Building Relationships with Families in Child Care
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHDV 111 Recommended
This course examines ways to establish and maintain positive and productive relationships with families in child-care programs. The focus includes understanding the parent's perspective, supporting the child's relationship with his/her family, encouraging parental involvement, and communicating with parents. CDA functional area: families.

CHDV 120 Child Care Curriculum: Physical Development
Term Prerequisite: None
Semester Prerequisite: None
This course provides an in-depth look at developing curriculum and activities which enhance the development of physical and motor skills of children in early childhood programs. It includes specific information on developmentally appropriate activities for fine motor, gross motor, and sensory development for a variety of ages. CDA functional area: physical.

CHDV 121 Child Care Curriculum: Cognitive and Language Development
Term Prerequisite: None
Semester Prerequisite: None
This course provides an in-depth look at curriculum and activities which enhance cognitive and language development of children in early childhood programs. It focuses on designing developmentally appropriate activities which foster curiosity and exploration. Topics include math, science, language arts, and emergent literacy. CDA functional areas: cognitive and communication.

CHDV 122 Child Care Curriculum: Creative Development
Term Prerequisite: None
Semester Prerequisite: None
This course provides an in-depth look at curriculum and activities which enhance the creative development of children in early childhood programs. Specific information on developmentally appropriate and open-ended activities in the areas of art, music, creative, and dramatic play with a variety of materials are shared. CDA functional area: creative.

CHDV 130 Introduction to Child Care
Term Prerequisite: None
Semester Prerequisite: None
This course introduces factors in providing quality day care. Topics include: program planning and curriculum development; child growth and development; positive guidance and discipline skills; safety, health, and nutrition; parent communication and involvement; professionalism. CDA functional areas: learning environment, program management, and professionalism.

CHDV 131 Family Day Care Management
Term Prerequisite: None
Semester Prerequisite: None
This course presents a systematic approach to managing a family day 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.

CHDV 150 Introduction to the Child Development Associate (CDA) Credential
Term Prerequisite: Instructor Approval
Semester Prerequisite: Departmental Approval
This course introduces the National Child Development Associate (CDA) Credentialing Assessment System. It examines credentialing procedures, resource file development, and the CDA competency standards. The functional area of professionalism is addressed.

CHDV 151 Child Development Associate (CDA) Credentialing Preparation
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHDV 150, Departmental Approval
This course is the final preparation for 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 areas of families, program management, safety, health, and professionalism.

CHDV 184 Children and Stress
Term Prerequisite: None
Semester Prerequisite: None
This course examines stress as it relates to children. Specific topics include symptoms and causes of stress; situations which are stressful for children; ways to help children cope with stress; techniques for reducing stress. Specific information on divorce, death, and hospitalization are discussed.

CHDV 185 Preventing Child Sexual Abuse: Teaching Personal Safety
Term Prerequisite: None
Semester 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; reporting protocol. It emphasizes appropriate ways of teaching personal safety to children, selecting personal safety materials, and adult concerns when teaching.

CHDV 186 Children's Self Esteem and Positive Discipline
Term Prerequisite: None
Semester Prerequisite: None
This course looks at children's self esteem: what it is, where it comes from, how it can be fostered or changed, and how it affects child care. It focuses on practical suggestions and teaches positive discipline techniques that build self esteem. CDA functional area: self, guidance.
CHDV 188 Caring for Young Children with Special Needs
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on young children with special needs and their families. It addresses identification of children with disabilities or in “at-risk” categories; community services; intervention in least restrictive environments; family-centered intervention; communication skills which enhance work with children with special needs and their families in various settings.

CHDV 189 Helping Children Value Diversity
Term Prerequisite: None
Semester Prerequisite: None
This course explores the various cultural groups and family structures that children encounter. It presents activities that caregivers can use to aid children in recognizing, valuing, and respecting diversity. Development of multi-cultural and anti-bias curriculum is emphasized.

CHDV 201 Meeting the Special/Diverse Needs of Children in Child Care
Term Prerequisite: CD 121 Recommended
Semester Prerequisite: CHDV 101 Recommended
This course focuses on the special and diverse individual needs of children in the child-care setting, including handicapping conditions and cultural diversity. It includes identifications of various categories of exceptionality and at-risk factors; mainstreaming, identification of resources; working with the community support system and the family.

CHDV 220 Curriculum and Learning Environments for Preschoolers
Term Prerequisite: Departmental Approval
Semester Prerequisites: CHDV 101, CHDV 111/Departmental Approval
This course develops developmentally appropriate preschool programming which promotes physical, cognitive, language and creative development through active involvement of children in concrete experiences. Topics include: designing safe, appropriate learning environments; selecting materials and equipment; developing children’s learning objectives. CDA functional areas: safe, healthy learning environment; physical and cognitive communication.

CHDV 221 Infant-Toddler Program Development
Term Prerequisite: CD 101 Concurrently
Semester Prerequisite: CHDV 101 Concurrently
This course explores the components of physical and emotional environments needed for quality child care for infants and toddlers. Focus includes developing nurturing skills, developmentally appropriate activities and materials; management of schedules and routines; observation; and record keeping skills. CDA functional areas: safe, healthy learning environment; physical and cognitive communication; program management.

CHDV 222 School-Age Child-Care Program Development
Term Prerequisite: None
Semester Prerequisite: None
This course examines the development of programs to meet the developmental characteristics of school-aged children (ages 5-12) outside of the elementary classroom. Content includes: growth and development patterns of early elementary school children, characteristics of learning and activities; environment and program structure; individual and group management.

CHDV 230 Child Care Center Administration
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHDV 220/10 Credits in CHDV/Departmental Approval
This course examines the administrator’s role in directing an early childhood center and in providing a systematic approach to program management. Topics include goal setting, safety, licensing, health and nutrition, policy development, business techniques, and personnel management. CDA functional areas: safe program management, professionalism.

CHDV 261 Issues in Teaching in Child Care
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHDV 220, Departmental Approval, CHDV 282 Concurrently
This course accompanies the Child Development Practicum, CHDV 282. It explores the professional role of the teacher in implementing the children’s daily program. Students gain skill in planning, goal-setting and evaluation. CDA functional areas: program management, professionalism.

CHDV 282 Child Development Practicum
Term Prerequisite: Departmental Approval
Semester Prerequisite: CHDV 220, Departmental Approval, CHDV 281 Concurrently
A supervised field experience working directly with children in a child-care program. Students gain skill in planning and implementing the daily children’s program, and in setting and assessing goals for individual children and the classroom. Students must concurrently enroll in the practicum seminar, CHDV 291.

CHEM 120 Basic General, Organic and Biological Chemistry
Term Prerequisite: MTH 009/Placement Test
Semester Prerequisite: MATH 040/Placement Test
Introduces topics in general, organic, and biological chemistry. 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, proteins, enzymes, and nucleic acids.

CHEM 125 Basic Chemistry
Term Prerequisite: MTH 009/Placement Test
Semester Prerequisite: MATH 082/Placement Test
Intended for students who have not had high school chemistry or who require a refresher course. Measurements, problem-solving, chemical formulas, chemical equations, stoichiometry, atomic structure, chemical bonding, gas laws, solutions, and acids and bases are emphasized.

CHEM 151 General Chemistry Lecture I
Term Prerequisite: High School Chemistry/CEM 110
Semester Prerequisite: MATH 112/Pass Placement Tests
The first of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, physical sciences, biological sciences, or engineering. Topics discussed include measurement, aqueous reactions, stoichiometry, thermodynamics, atomic structure, bonding, and modern materials.

CHEM 152 General Chemistry Lecture II
Term Prerequisite: CEM 172
Semester Prerequisite: CHEM 151, MATH 121
The second of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, sciences, or engineering. Topics include kinetics, ionic equilibria, thermodynamics, electrochemistry, descriptive chemistry, and nuclear chemistry.

CHEM 161 General Chemistry Laboratory I
Term Prerequisite: CEM 171
Semester Prerequisite: CHEM 151/Concurrently
Laboratory course designed to complement CHEM 151. Stresses basic laboratory techniques, writing lab reports, and critical thinking exercises. Topics include density determination, synthesis, empirical formulas, crystalization, gas laws, caustometry, and freezing point depression.

CHEM 162 General Chemistry Laboratory II
Term Prerequisite: CEM 161
Semester Prerequisite: CHEM 152/Concurrently, CHEM 161
CHEM 162 is a laboratory course that complements CHEM 162. Includes quantitative experiments stressing accuracy, precision, and error determination.

CHEM 182 Introductory Organic Chemistry
Term Prerequisite: CEM 111, CEM 161
Semester Prerequisite: CHEM 151
A survey of the principles of organic chemistry. Introduces the student to structure, nomenclature, chemical and physical properties, selected characteristics, preparations and reactions of the most common classes of organic compounds. Other topics include polymers, optical isomerism, and selected reaction mechanisms.

CHEM 192 Introductory Organic Chemistry Laboratory
Term Prerequisite: 2.0 Minimum in CEM 111, CEM 161
Semester Prerequisite: CHEM 182 Concurrently
Designed for students in majors such as packaging, agriculture, and forestry who require only one credit of organic lab. It gives students an introduction to common techniques, equipment, and chemicals found in an organic laboratory. Particular attention is given to compounds studied in CHEM 182.

CHEM 251 Organic Chemistry Lecture I
Term Prerequisite: CEM 172, CEM 162
Semester Prerequisite: CHEM 152
The first lecture course of a two-semester sequence in organic chemistry for chemical engineering, chemistry, or professional majors. Topics include structure and bonding, hybridization, nomenclature, stereochemistry, thermodynamics and kinetics of organic reactions, and functional groups including reaction and mechanisms.

CHEM 252 Organic Chemistry Lecture II
Term Prerequisite: CEM 251
Semester Prerequisite: CHEM 251
Continuation of CHEM 251. Topics include spectroscopy, organometallic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, enolates, carbohydrates, lipids, proteins, and nucleic acids.
CHEM 262  Quantitative Analysis  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: CHEM 162  
Theory and procedures of classical analytical techniques, including gravimetric analysis and titrimetric methods. Use of instruments such as spectrophotometers, pH meters, and others is also included.

CHEM 272  Organic Chemistry Laboratory  
Term Prerequisite: CHEM 251  
Semester Prerequisite: CHEM 251  
Designed for students (in majors such as chemistry, pre-med, and pre-pharmacy) who require more than one credit of organic lab. It gives students experience with the chemicals, techniques, and equipment commonly employed in organic laboratories. Particular attention is given to compounds studied in CHEM 251 and 252.

CHIN 101  Elementary Chinese I  
Term Prerequisite: None  
Semester Prerequisite: None  
Designed to help students build a foundation of Chinese language learning. Students will develop the basic skills in the areas of speaking, listening, reading, and writing. Different aspects of the Chinese culture will be introduced.

CHIN 115  Seminar: Conversational Chinese I  
Term Prerequisite: None  
Semester Prerequisite: None  
Designed for people who have little background in the Chinese language and culture, but wish to acquire conversational skills. Students will learn proper pronunciation, the four tones of Putonghua—the standard vernacular, basic sentence structures, and practical vocabulary for everyday use. Selected aspects of Chinese culture will be introduced.

CHSE 101  Acute Care Nurse Assistant/Orderly  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will prepare an individual for employment as a Nursing Assistant/Orderly in an acute-care hospital or home health care. The course will provide the knowledge and skills needed in order to provide basic patient care safely.

CHSE 106  Long-Term Care Nurse Aide Update  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: None  
This course is designed to update the patient skills and knowledge of the certified long-term care nurse aide. This educational update may be individualized to meet the needs of nurse aides within a long-term care facility.

CHSE 108  Long-Term Care Nurse Aide  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will prepare women and men to be members of the long-term nursing care team. This is a state-approved certified course and will provide specific knowledge and skills required for a nurse aide to function in a long-term care nursing facility.

CHSE 111  Medical Insurance Billing I  
Term Prerequisite: CHS 121/Equivalent  
Semester Prerequisite: CHS 121/Equivalent  
First course in a two-semester sequence introduces the student to insurance billing, diagnostic and procedure coding for physician billing, and comprehensive billing directions for BCBS of Michigan. The student must have a grade of 2.5 or better, to continue with Medical Insurance Billing II.

CHSE 112  Medical Insurance Billing II  
Term Prerequisite: CHS 111  
Semester Prerequisite: 2.5 Minimum in CHSE 111  
Second course in a two-semester sequence. Comprehensive billing directions for Medicare, Medicaid, PHP, and other commercial insurance carriers for billing in the physician's office are covered. A certificate of completion is awarded for Medical Insurance Billing if a grade point of 2.5 or better is earned in CHSE 111 and CHSE 112.

CHSE 121  Medical Terminology for Allied Health I  
Term Prerequisite: None  
Semester Prerequisite: None  
Medical Terminology I will provide a basic knowledge of word building, and use, pronunciation, and spelling of medical terms. The use of medical terms in periodicals, textbooks, and medical care areas will be stressed. It provides a sound basis for those students interested in health careers.

CHSE 122  Medical Terminology for Allied Health II  
Term Prerequisite: CHS 121  
Semester Prerequisite: CHS 121  
Medical Terminology II will teach the student to utilize medical terminology in context by applying terms to the function and structure of body systems and specific disease conditions. Students will build on knowledge learned in Medical Terminology I.

CHSE 126  Medical Terminology for Insurance Examiners  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Medical Technician/Insurance Examiner  
Medical terminology is a technically exact vocabulary used by professionals to speak and write precisely. This medical terminology course is designed for insurance examiners and insurance medical technicians. The use of medical terms in records and specific medical areas will be stressed.

CHSE 132  Health Unit Clerk/Coordinator  
Term Prerequisite: CHS 121  
Semester Prerequisite: CHSE 121  
Course is designed to introduce the student to basic Health Unit Coordinator skills. Subject matter will include communication skills, computers, assertiveness, charting, admissions, surgeries, transfers, discharges, death and dying, pharmacology, laboratory tests, transcribing physician orders and job application skills. Clinical component is included. We offer a generic program.

CHSE 134  Health Unit Clerk Certification Update  
Term Prerequisite: Health Unit Clerk Coordinator  
Semester Prerequisite: Health Unit Clerk Coordinator  
This seminar is to assist the Health Unit Coordinator in preparation for the HUC National Certification Exam. The seminar includes an introduction to anatomical structure, medical terms, patient charts, transcription of physician orders, HUC procedures, management of human relations, prioritizing, and communication skills.

CHSE 143  Phlebotomy Technician  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed to prepare a person to function as a phlebotomy technician. It will provide the knowledge and skill necessary to safely and skillfully obtain a blood specimen from a patient. The course includes theory, lecture, and laboratory practice. Students practice on each other.

CHSE 145  Central Service Technician  
Term Prerequisite: High School Graduate  
Semester Prerequisite: High School Graduate  
Prepares individuals to function competently in the Central Service Department of a health-care facility. Duties include (but are not limited to): processing of patient care equipment, supplies, and instruments for use in all departments. Includes principles and practices of decontamination, cleaning, disinfection, sterilization, and distribution of medical/surgical supplies.

CHSE 146  Central Service Update  
Term Prerequisite: Central Service Personnel  
Semester Prerequisite: Central Service Personnel  
This course will provide a review of current concepts and practices and update new information within the Central Service Department. It shall provide needed education for Central Service personnel to perform with competence and maintain established standards as defined by regulatory agencies.

CHSE 182  Medical Hospital Billing  
Term Prerequisite: 6 Months Medical Billing Experience/Medical Terminology  
Semester Prerequisite: 6 Months Hospital Medical Billing Experience/Medical Terminology  
This one-semester course is designed to teach the student each phase of hospital insurance billing, from receiving patient information until the payment is received. Participation in case discussions and work sessions is expected by all students. Presentation of materials will be lectures, discussions, and work sessions.

CHSE 201  Dietary Manager I  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Departmental Approval  
The first course in a two-semester sequence which will prepare students for a career as a Dietary Manager. The course will include both classroom and field experience. Topics such as the role of the supervisor, quality assurance, and nutritional principles will be included.

CHSE 202  Dietary Manager II  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Departmental Approval  
The second course in a two-semester sequence which will prepare students for a career as a Dietary Manager. This course will include both classroom and field experience. Students will be prepared to obtain both state and national credentials as a Dietary Manager.

CHSE 205  Advanced Dietary Therapy  
Term Prerequisite: CHS 201/Nutrition Class  
Semester Prerequisite: CHSE 201/Nutrition Class  
A one-semester course which is designed to provide advanced knowledge of diet therapy and nutritional care for Dietary Managers. The course will include nutrition knowledge as they relate to providing adequate nutritional care to patients.

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CHSE 207 Dietary Manager Update
Term Prerequisite: Dietary Manager
Semester Prerequisite: Dietary Manager
Seminar designed for Dietary Managers. A variety of current issues and topics specific to the role of the DM will be included. This seminar would be helpful in preparation for the DM credentialing examination.

CHSE 210 RN State Board Update
Term Prerequisite: Departmental Approval
Semester Prerequisite: Graduate Nurse, Diploma/ADN/BSN
This course incorporates 12 hours of directed independent study in basic psychiatric nursing practice or medical-surgical, obstetrical, or pediatric nursing practice. Students work through progressive, structured activities including home study, class participation, group discussion, and practice tests to challenge critical-thinking skills in complex simulated patient scenarios.

CHSE 212 Health Care Independent Study
Term Prerequisite: Basic Cardiac Life Support Certificate, Health Professional
Semester Prerequisite: Basic Cardiac Life Support Certificate, Health Professional
This independent study is designed to present updated and current concepts of Advanced Cardiac Life Support (ACLS) to a health-care professional. This is to be accomplished through the use of the Atronic computer and one-to-one tutorial. ACLS certification is possible. Prior assigned readings are mandatory.

CHSE 213 Basic Psychiatric Technician
Term Prerequisite: Departmental Approval
Semester Prerequisite: Interview, Departmental Approval
This course covers concepts of personality development, identification of mental illnesses, patient rights, aspects of confidentiality, therapeutic interventions, and specific means of evaluating patient care. Supervised clinical experience provides opportunities for students to apply classroom material to practical situations.

CHSE 214 Correctional Medical Aide
Term Prerequisite: Michigan Department of Corrections Officer in Training
Semester Prerequisite: Michigan Department of Corrections Officer in Training
This course covers concepts of personality development, identification of mental illnesses, patient rights, aspects of confidentiality, therapeutic interventions, and documentation of care. Supervised clinical experience provides opportunities for students to apply classroom material to the work situation. Department of Correction registered nurses will be the clinical instructors.

CHSE 215 Health Careers Directed Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Graduate Nurse, Diploma/ADN/BSN
A directed study course for international students and inactive nurses. This course focuses on nursing practice in the American health-care system, including use of nursing process, roles, dependent/independent activities, specialty equipment, etc. Observations in local hospitals, lectures, skills practice sessions, and independent study may all be used.

CHSE 221 Management of Aggressive Behavior
Term Prerequisite: Departmental Approval
Semester Prerequisite: Special Transportation Employee
This course includes the assessment of individual and environment, causes and exacerbators of aggressions, preventive measures to avoid or de-escalate a risk situation, and therapeutic interventions. Learned material will be reinforced with role-playing, assessment of videotaped situations, and demonstration of appropriate physical techniques.

CHSE 222 Special Transportation Health Care
Term Prerequisite: Departmental Approval
Semester Prerequisite: Special Transportation Employee
Course is designed for special transportation health-care personnel/bus drivers/assistants who transport medically handicapped or mentally fragile individuals. This course covers various medical diseases and treatments, and provides practice skills pertinent for job performance.

CHSE 223 Health Care Seminar - Special Transportation
Term Prerequisite: Special Transportation Employee
Semester Prerequisite: Special Transportation Employee
This course is for special transportation personnel and other human service personnel to teach ways of reducing exposure to and transmission of various infectious diseases. The content will include etiology, sources of transmission, and symptomology of various infections: Hepatitis B, HIV and Herpes.

CHSE 226 School Bus Health Care
Term Prerequisite: Departmental Approval
Semester Prerequisite: Special Transportation Employee
Course is designed for special transportation health-care personnel/bus drivers/assistants who transport medically handicapped or mentally fragile individuals. This course covers various medical diseases, treatments, and provides practice skills pertinent for job performance. This course includes dealing with aggressive behavior and steps in first aid.

CHSE 231 Pharmacology of Substance Abuse
Term Prerequisite: None
Semester Prerequisite: None
Chemical and physiological nature of substances (alcohol, hard drugs, amphetamines) which have addiction possibilities will be discussed. Required course in the Substance Abuse Certificate Program. Emphasis on pharmacology of substance abuse, detection, and identification of physiological responses specific to various substances. Includes psychological aspects of substance use and abuse.

CHSE 232 Overdose Crisis Intervention
Term Prerequisite: None
Semester Prerequisite: None
Students will attend crisis intervention knowledge of how to recognize a drug overdose, assists the degree and type of immediate steps to learn how to provide related life-support aid. Students will learn how to use existing resources in supplementing aid and transporting patients. Designed for substance abuse counselors.

CHSE 235 Pharmacy Technician
Term Prerequisite: MTH 009 Competency
Semester Prerequisite: MATH 040 Competency
This course is designed to introduce students to the skills necessary for a pharmacy technician position in a hospital or retail pharmacy. Students will be prepared to function with knowledge and accuracy in dispensing and control of drugs in either setting. Certificates awarded with 2.5 grade or better.

CHSE 240 Dietary Aide
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to educate the student in the principles of dietary job responsibilities. The student will learn knowledge of diets, food preparation, sanitation and safety techniques. The course content will be subdivided into lecture, campus lab, and clinical lab.

CHSE 241 Housekeeping Aide
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to educate the student in the principles of housekeeping job responsibilities. The student will learn knowledge of various cleaning techniques and their application in specialty clinical areas. The course content will be subdivided into lecture, campus, and clinical lab.

CHSE 245 Executive Housekeeping
Term Prerequisite: Housekeeping Employee
Semester Prerequisite: Housekeeping Employee
A series of seminars on required or elective topics defined by the NEHA. Topics include (but are not limited to): housekeeping techniques, safety, work controls, management, budgeting, and purchasing. Upon successful completion of this program, the student will be eligible for certification by NEHA.

CISB 100 Introduction to Computer Information Systems
Term Prerequisite: None
Semester Prerequisite: None
This course provides an introduction to computers, their role in managing business information systems, their influence on society, and their use in personal productivity. It includes a hands-on introduction to three major microcomputer tools: word processors, spreadsheets, and database management systems.

CISB 101 Business Communications Technology
Term Prerequisite: None
Semester Prerequisite: None
This course presents telecommunications technology in the perspective of business. It provides a non-technical framework to understand and effectively use the latest technology. Subject areas include telephone systems and computer communications systems. Applications explored include on-line databases, facsimile systems, and computer networks.

CISB 104 Introduction to DOS
Term Prerequisite: None
Semester Prerequisite: None
Students in this course develop skill in applying the most common commands of the disk operating system (DOS) used by IBM-type microcomputers. Students also learn how to work with disk directories and how to create batch files.

CISB 105 Advanced Microcomputer Applications
Term Prerequisite: CAS 106
Semester Prerequisite: CISB 100
Students in this course work with and expand software skills learned in CISB 100. Students learn spreadsheet skills such as linked files, macros, and database; database skills such as indexing and query criteria; and word-processing skills such as mailmerge and macros. Data communications and business graphics are also covered.
CISB 110: Documentation of Computer Systems
Term Prerequisite: None
Semester Prerequisite: None
This course provides the student with an understanding of the various types of documentation used in professional computer systems. Topics include analytical documentation, system documentation, program documentation, operations documentation, standards and procedures manuals, and training manuals.

CISB 111: Introduction to Operations
Term Prerequisite: CAS 100/Concurrently
Semester Prerequisite: CISB 100/Concurrently
This course is an introduction to the concepts and terminology used in computer operations. Topics include the classifications, functions, and operations of hardware, operating systems, and software. The responsibilities of the computer operator are discussed.

CISB 120: Introduction to Programming and Logic Using BASIC
Term Prerequisite: MTH 012/Equivalent
Semester Prerequisite: MATH 012/Equivalent
A first course in computer programming and programming logic for computer information majors and others wanting an intensive introduction to problem-solving techniques using the QuickBASIC programming language.

CISB 121: Programming in BASIC Language
Term Prerequisite: CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 120
This course is a second in the sequence of two courses in BASIC language programming. Topics include sequential and random access files, screen formatting and editing, menu-driven systems, simulations, and program maintenance.

CISB 125: Pascal for Business
Term Prerequisite: CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 120
Students will design, write, and test programs solving business related problems using structured techniques with Turbo Pascal. The syntax and style of modern Pascal programming in a business environment is introduced. Students learn the relationship between data structures and program complexity. Students explore object-oriented programming techniques and Windows interfaces.

CISB 130: Data Communications
Term Prerequisite: CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 120
This course covers a comprehensive introduction to data communications systems: the major components, how they are integrated, and the differences between the various networks and network carriers. Students learn the terminology and major protocols to a depth adequate to design application programs and discuss data communication topics with other professionals.

CISB 145: Operations Internship 1
Term Prerequisite: CAS 100, CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 111, CISB 120
This internship provides the student with on-the-job experience as a computer operator. The student may take the second internship concurrently with the first at a different site. 160 hours of experience are required for each internship.

CISB 146: Operations Internship 2
Term Prerequisite: CAS 100, CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 111, CISB 120
This internship provides the student with on-the-job experience as a computer operator. The student may take the first internship concurrently with the second at a different site. 160 hours of experience are required for each internship.

CISB 165: Forms Design and Control
Term Prerequisite: CAS 100
Semester Prerequisite: CISB 100
This course covers all phases in the life-cycle of a form, from the initial recognition of a form needed through the utilization of the form. Topics include layout of items, design of margins and print spacing, grades of paper, reproduction, binding, and forms processing by users.

CISB 170: COBOL
Term Prerequisite: CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 120
An introductory course in COBOL programming emphasizing syntax, structured program design, and program maintenance. Coding standards and program documentation are introduced. Topics include control breaks, table processing, sub-program concepts, and multiple-level tables.

CISB 175: Introduction to RPG II With RPGIII/400 Topics
Term Prerequisite: CAS 151, CAS 121
Semester Prerequisite: CISB 100, CISB 120
An introductory course in RPGIII programming emphasizing syntax, structured program design, and program maintenance. Coding standards and program documentation are introduced. Topics include control breaks, table processing, sub-program concepts, and multiple-level tables.

CISB 176: AS/400 Environment
Term Prerequisite: CAS 100
Semester Prerequisite: Departmental Approval
This course will provide the student with a customized set of materials about the AS/400 computer environment. The student and instructor will establish the specific course content from the available AS/400 tutorials and IBM DiscoverEducation courses the first week of class.

CISB 177: AS/400 Operations
Term Prerequisite: CAS 137/CAS 164
Semester Prerequisite: CISB 176
A hands-on course in AS/400 operations. The course will cover the AS/400 architecture and facilities; operational requirements, such as save and restore; hardware and software installation; configurations for local and remote communication; CL and CMD programming; system problem determination; and problem resolution.

CISB 180: C Programming with Business Application
Term Prerequisite: CAS 151, CAS 121
Semester Prerequisite: CISB 100, CISB 120
Students will use professional development tools to become familiar with the "C" programming language by designing, implementing, and testing programming projects. Topics include pointers, linked lists, data structures, and dynamic memory allocation.

CISB 200: Information Systems Technology
Term Prerequisite: None
Semester Prerequisite: None
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.

CISB 201: Information Systems Auditing
Term Prerequisite: CAS 100
Semester Prerequisite: CISB 100
This course covers basic concepts important in the auditing of computer systems. The use of general and application controls of information systems will be discussed. Other topics include computer crimes, computer ethics, and auditing standards.

CISB 210: dBASE Programming
Term Prerequisite: CAS 151, CAS 121, CAB 150/CAB 133
Semester Prerequisite: CISB 105, CISB 120
In this course students learn to use the dBASE language to develop applications programs. The course covers the major dBASE programming concepts and constructs and teaches how to use them in developing structured programs. Students also learn to use the Applications Generator and Template Language to simplify the programming task.

CISB 230: Local Area Networks
Term Prerequisite: CAS 104, CAS 231
Semester Prerequisite: CISB 130
This course covers procedures for installing and maintaining a Local Area Network (LAN). Topics include basic network concepts and terms, network installations, and network design and implementation.

CISB 235: Microcomputer Support
Term Prerequisite: CAS 104, CAS 231
Semester Prerequisite: CISB 100, CISB 104, CISB 120
This course covers the practical, hands-on experience in installing, maintaining, and troubleshooting microcomputer hardware and software. Topics include CPU, storage devices, add-on boards, video displays, printers, communication devices, software installation, and configuration.

CISB 240: Operating Systems
Term Prerequisite: CAS 161
Semester Prerequisite: CISB 100, CISB 120
This 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. The MS-DOS, Windows, OS/2, UNIX, MUSIC, MVS, and VM operating systems are discussed.

CISB 245: Programming Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This internship provides the student with on-the-job experience as a computer programmer. Two hundred hours of experience at a local computer information systems site is required. The student is expected to write or maintain programs, create documentation, learn job control commands, and work on interactive systems.
CISB 247 Microcomputer Project 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
With this course students apply what they have learned about programming and systems development as a part of an internship, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of 160 internship hours or 60 independent study hours.

CISB 248 Advanced Concepts in Computer Information Systems 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
With this course students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum for each credit earned of either 16 classroom hours or 48 independent study hours.

CISB 249 Advanced Concepts in Computer Information Systems 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
With this course students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum for each credit earned of either 16 classroom hours or 48 independent study hours.

CISB 250 Database Concepts 3
Term Prerequisite: CAS 164/CAS 172
Semester Prerequisite: CISB 100, CISB 120
Learning the objectives of a database organization and investigating the extent to which these objectives are met by current database management software. Normalization and database design are studied. The relational and CODASYL models are used.

CISB 255 Hands-on Modern Expert System Development 3
Term Prerequisite: CAS 121, CAS 151
Semester Prerequisite: CISB 100, CISB 120
In this hands-on course, students will learn the basics of expert system development and actually develop a small, working expert system. The techniques and development of more complex systems are studied. The general development and application of Artificial Intelligence is surveyed.

CISB 260 Systems Analysis and Design 4
Term Prerequisite: CAS 171/CAS 152/CAS 161
Semester Prerequisite: CISB 100, CISB 120
The course presents concepts and techniques used in development of computer business application systems. The traditional approach for systems development is presented and compared to the approach used in a 4th Generation Environment. Structured techniques are utilized in the development approach as well as Computer Assisted Software Engineering (CASE) tools.

CISB 261 Systems Implementation with CASE Tools 3
Term Prerequisite: CAS 281, CAS 262
Semester Prerequisite: CISB 260
This course applies the concepts and techniques of systems analysis and design developed in CISB 260 into working systems. Computer Assisted Software Engineering tools will be used to develop a business computer system. Students will be formed into project teams for the course project.

CISB 270 COBOL II 3
Semester Prerequisite: CAS 172
Semester Prerequisite: CISB 170
An advanced COBOL course covering sort, file processing, sequential file updating, random file updating, and writing interactive programs. Copy libraries are used, and a system of related programs is completed as a class project.

CISB 275 RPG/400 Programming 4
Term Prerequisite: CAS 161
Semester Prerequisite: CISB 175
A detailed course covering fundamentals of the modern RPG/400 programming language. The course will cover RPG/400 programming techniques, modular programming, relational database manipulation and techniques, and system interaction. The course will use an AS/400 computer in the native AS/400 environment.

CISB 280 C++ Language with OOP 4
Term Prerequisite: CAS 190
Semester Prerequisite: CISB 190
Students will use the Borland Integrated Environment to become familiar with the C++ programming language and object-oriented programming and design by designing, implementing, and testing programming projects.

CISB 284 Certified Data Processor Exam Specialty Area Preparation .5
Term Prerequisite: None
Semester Prerequisite: None
Review seminar for the Certified Data Processor (CDP) exam. This seminar focuses on the portion of the exam unique to those seeking the CDP designation; concentration is on management topics. ICCP Core Exam seminars are recommended in addition to this seminar.

CISB 285 Certified Systems Professional Exam Specialty Preparation .5
Term Prerequisite: None
Semester Prerequisite: None
Review seminar for the Certified Systems Professional (CSP) exam. This seminar focuses on the portion of the exam unique to those seeking the CSP designation; concentration is on systems development topics. ICCP Core Exam seminars are recommended in addition to this seminar.

CISB 286 Certified Computer Programmer Exam Specialty Preparation .5
Term Prerequisite: None
Semester Prerequisite: None
Review seminar for the Certified Computer Programmer (CCP) exam. This seminar focuses on the portion of the exam unique to those seeking the CCP designation; concentration is on procedural programming topics. ICCP Core Exam seminars are recommended in addition to this seminar.

CISB 287 ICCP Core Exam Review Session 1 .5
Term Prerequisite: None
Semester Prerequisite: None
Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CDP, CCP, or CSP. This seminar reviews (1) human and organizational framework, and (2) associated disciplines.

CISB 288 ICCP Core Exam Review Session 2 .5
Term Prerequisite: None
Semester Prerequisite: None
Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CDP, CCP, or CSP. This seminar reviews (1) systems concepts and (2) systems development.

CISB 289 ICCP Core Exam Review Session 3 .5
Term Prerequisite: None
Semester Prerequisite: None
Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CDP, CCP, or CSP. This seminar reviews (1) data and information and (2) technology.

CIVL 101 Civil Drafting 4
Term Prerequisite: DT 100
Semester Prerequisite: TECH 090
Civil Drafting is a course which emphasizes traversal and topographical drawing problems. The course will equip the student with the skills and line techniques, and the ability to prepare a clear, readable, graphical presentation from rough notes furnished by the survey party.

CIVL 120 Surveying 4
Term Prerequisite: DT 100
Semester Prerequisite: TECH 090, TECH 100
Introduction to surveying technology and use of the latest equipment. The emphasis is on developing skills in operating, proper handling of the high tech equipment used in the surveying business. Developing good field work habits as well as office engineering is included in the course.

CIVL 124 Route Survey 4
Term Prerequisite: CT 125, Trigonometry
Semester Prerequisite: CIVL 100
This course covers computations involved in basic surveying along with construction surveying applications.

CIVL 126 Highway Construction Survey I 5
Term Prerequisite: None
Semester Prerequisite: None
This course introduces basic skills and techniques used in construction surveying. Covers office computations and developing skills necessary to do field work.

CIVL 127 Highway Construction Survey II 5
Term Prerequisite: CT 130
Semester Prerequisite: CIVL 126
Students will learn how to interpret highway construction plans, then develop horizontal and vertical control data needed to construct both bridges and roads.
CIVL 131 Traffic Technology
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the basic principles of traffic engineering design, signing, and pavement marking, traffic signalization, and how these elements are used to improve motorists' safety. Emphasis is placed on the use of these devices in and around construction zones. Basic concepts on traffic flow and capacity analysis will be presented.

CIVL 132 Construction Materials
Term Prerequisite: TEC 151
Semester Prerequisite: TEC 110/Placement Test
The students will study techniques and equipment used in constructing bridges, buildings, highways, and pipelines. Deals with the determination of properties of aggregates, concrete, and other bituminous materials. Teaches methods of designing concrete mixes for different uses and methods of sampling and testing. Comparison of building codes and construction specifications will be covered.

CIVL 135 Soils Technology
Term Prerequisite: ATM 150
Semester Prerequisite: TEC 110/Placement Test
Exploring, sampling, testing, and evaluating subsurface materials and their effect on construction are covered in this course. Introduction to methods of surface drainage, soil classifications, and physical properties of soils. Includes discussion, demonstration, and performance with equipment used in density testing.

CIVL 136 Hydrology and Highway Technology
Term Prerequisite: TEC 152, CT 260, PHY 201
Semester Prerequisite: TEC 110/Placement Test, CIVL 131
This course is an introduction to highway inventory, planning, organization, rudiments of finance, geometric design, earthwork, and drainage structures. Emphasis is placed on these elements as components of final highway plans. Analysis of precipitation and the attendant runoff and recharge will be introduced.

CIVL 188 Concrete Paving Inspector
Term Prerequisite: Construction Experience
Semester Prerequisite: Construction Experience
This is an intensive course on the practical aspects of inspection and quality control of Portland Cement concrete paving projects.

CIVL 200 Civil Mathematics
Term Prerequisite: ATM 154
Semester Prerequisite: TEC 110
This course covers applications of differential calculus and integral calculus to practical technical problems. Topics include related rates, maximum and minimum problems, and areas under curves.

CIVL 241 Statics and Strength of Materials
Term Prerequisite: TEC 150
Semester Prerequisite: TEC 110/CIVL 200 Concurrently
This course introduces structural terminology and concepts. The general behavior of structural members in compression, stress, strain, creep, fatigue, yield, tension, shear, bending, and torsion due to different loading conditions are studied. Loads and forces, conditions of stability and equilibrium in structural frames, and free body analysis for reactions and member forces are considered in the course.

CJCT 203 Criminal Justice Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Each workshop will be structured around updated and/or advanced information to build upon the criminal justice professional's previous knowledge base.

CJCT 201 Leadership Graduate Workshop
Term Prerequisite: None
Semester Prerequisite: None
The leadership graduate workshop on creativity is designed to continue the fostering and developing of individual leadership skills for graduates of the Criminal Justice Leadership Academy. In addition to creative skill development, the participants will be apprised of new developments in the area of leadership.

CJCT 202 Legal Assistant Career Search
Term Prerequisite: None
Semester Prerequisite: None
One-day workshop for legal assistant students and graduates seeking law-related employment. Focus will be on hiring practices that are unique in this field.

CJCT 204 Pressure Point Control Tactics Instructor School
Term Prerequisite: None
Semester Prerequisite: None
Three-day course which will certify an individual to be an instructor for the pressure point control tactics systems.

CJCT 205 Basic Drug Investigation
Term Prerequisite: None
Semester Prerequisite: None
Two-week basic narcotics investigation school for police officers. Problem areas covered will range from drug traffic patterns to drug identification, the law governing their control and use, case initiation to clandestine laboratories, and raid procedures.

CJCT 207 Fraudulent Checks
Term Prerequisite: None
Semester Prerequisite: None
Half-day seminar designed for cashiers and tellers who will supervise line clerks who work registers in the area of fraudulent checks, credit cards, driver's license, and other ID cards. Hands-on work with counterfeit money, credit cards, and identification will be shown.

CJCT 208 Surveillance
Term Prerequisite: None
Semester Prerequisite: None
Workshop on surveillance techniques for law enforcement officers. Three-day seminar. First and second days will be primarily lecture with audio visual demonstration and discussion. Third day will be hands-on field exercises. Officers will follow a "rabbit" using the techniques learned in the seminar to do a surveillance. Students and instructors will meet after the planned surveillance to do critique.

CJCT 210 Recruitment/Background Investigation
Term Prerequisite: None
Semester Prerequisite: None
This three-day program has been designed to examine common problems and issues in employment practices and to provide suggestions to improve these practices. Modern case law and federal guidelines regarding Equal Employment Opportunity Commission legal implications, civil service requirements, and human resources needs in law enforcement organizations will be discussed.

CJCT 212 Submachine Gun Instructor
Term Prerequisite: None
Semester Prerequisite: None
Three-day workshop that provides police officers with a basic knowledge of several different types of submachine guns.

CJCT 213 Hostage Survival
Term Prerequisite: None
Semester Prerequisite: None
This half-day workshop will address techniques of hostage survival for financial institution employees. It will also address psychological issues impacting the victim(s).

CJCT 214 Instructor Recertification/Defensive Tactics Update
Term Prerequisite: None
Semester Prerequisite: None
This workshop is designed to recertify criminal justice instructors in the PPCT Defensive Tactics system and provide new teaching principles, techniques, and training procedures.

CJCT 215 Expert Witness
Term Prerequisite: None
Semester Prerequisite: None
This one-day training session is designed for prosecuting attorneys who utilize the testimony of various law enforcement and criminal justice experts in the courtroom.

CJCT 218 Do Rite Instructor School
Term Prerequisite: None
Semester Prerequisite: None
The intent of the Do Rite Instructor School is to provide defensive tactics instructors with the specialized knowledge necessary to teach the Do Rite restraint system. Participants in the program will learn methods of application, instruction, and evaluation.

CJCT 219 Evidence Technician
Term Prerequisite: None
Semester Prerequisite: None
Two-week school designed for the law enforcement officer who will be processing crime scenes such as homicides, fatal accidents, hit and run, arson, and CSUs. In addition to classroom instruction, time will be spent in the field on practical, hands-on crime scene exercises.

CJCT 220 Firearms Range Officer Instructor School
Term Prerequisite: None
Semester Prerequisite: None
A 40-hour training program designed to give the officer the necessary knowledge and skill to safely, efficiently, and effectively supervise a firearms range. Topics include safety, diagnostic skills, legal issues, ballistics, decision shooting, weapon care and maintenance, and marksmanship.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term Prerequisite</th>
<th>Semester Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJCT 221</td>
<td>Counseling Techniques</td>
<td>1</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>Two-day program designed to teach police supervisors the skills needed to effectively counsel subordinate officers. Techniques will be taught in accurate, empathetic listening; and officers will be trained in the concept of goal-oriented, self-responsibility, and problem-solving.</td>
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<tr>
<td>CJCT 222</td>
<td>LE Contract Negotiations</td>
<td>1</td>
<td>None</td>
<td>None</td>
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<td>This two-day seminar is designed for non-supervisors, supervisors, and civilians who will be negotiating contracts for their respective units. Those attending will learn what their role is as a labor negotiator and their responsibility to their bargaining units.</td>
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<tr>
<td>CJCT 226</td>
<td>Investigative Techniques and Procedures</td>
<td>1.5</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>A three-day seminar for investigators and inspectors in both basic and specialized skills required for the exacting work of their jobs. Includes areas on investigative techniques, writing investigation reports, case management, evidence collection and preservation, successful interviewing, etc.</td>
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<tr>
<td>CJCT 227</td>
<td>Investigative Techniques II</td>
<td>1.5</td>
<td>None</td>
<td>None</td>
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<td>Two-day program for investigators with the State of Michigan. Topic areas to include areas related to search and seizure laws, court structures, 5th Amendment, and the Miranda Act.</td>
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<tr>
<td>CJCT 228</td>
<td>Crime/Accident Scene Photography</td>
<td>2.5</td>
<td>None</td>
<td>None</td>
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<td>Comprehensive five-day (40 hours plus) workshop including night exercises for law enforcement officers covering the use of 35mm cameras, lenses, film and flash, and specific applications and techniques for crime and accident scene photography.</td>
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<tr>
<td>CJCT 229</td>
<td>Police Radar Operator School</td>
<td>1.5</td>
<td>None</td>
<td>None</td>
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<td>Instruction is given in the proper installation, setup, and operation of radar calibration, target selection and identification, and courtroom testimony. In addition, participants are required to perform 24 hours of field exercise between the first and second day of class. (Classes are normally scheduled four weeks apart.)</td>
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<tr>
<td>CJCT 232</td>
<td>Hostage Negotiations</td>
<td>2.5</td>
<td>None</td>
<td>None</td>
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<tr>
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<td>A half-day course designed to be taken with Hostage Negotiations. One-day school to give hostage negotiators a more in-depth discussion of negotiating techniques. This half-day program is limited to those officers who are designated as hostage negotiators by their departments.</td>
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<tr>
<td>CJCT 233</td>
<td>Hostage Negotiations</td>
<td>2.5</td>
<td>None</td>
<td>None</td>
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<td>This is a five-day program which includes two days of lecture by experts in the field of hostage negotiations. The remaining three days deal with role playing for the designated hostage negotiators. This training is conducted by faculty members of the Criminal Justice and Law Center who are experienced in hostage negotiations.</td>
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<tr>
<td>CJCT 235</td>
<td>Hostage Negotiations Review II</td>
<td>1</td>
<td>None</td>
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<td></td>
<td>Two-day mandatory training in hostage negotiation skills. Pertinent material updates are provided as well as negotiating practicum.</td>
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<td>CJCT 236</td>
<td>Cultural Diversity</td>
<td>.5</td>
<td>None</td>
<td>None</td>
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<td>This course introduces concepts in race relations and human behavior management which will improve students' ability to handle racially sensitive encounters with pride and control. Issues involving race, cultural difference, inter-group conflicts, and police-citizen relations in minority communities are addressed.</td>
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<tr>
<td>CJCT 237</td>
<td>Crime Prevention</td>
<td>2.5</td>
<td>None</td>
<td>None</td>
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<td>Forty-hour course designed for law enforcement and private security personnel. Will consist of lecture, hands-on, and practical exercises. Increasing crime rates and citizen demands are dictating that we offer more pro-active service within our communities.</td>
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<tr>
<td>CJCT 238</td>
<td>Investigative Techniques/Adult Foster Care</td>
<td>.5</td>
<td>None</td>
<td>None</td>
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<td>One-day course for adult foster care workers covering investigative techniques including gathering and evaluating evidence, types of evidence, field note-taking, rules of evidence, and other important aspects of a successful investigation.</td>
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<tr>
<td>CJCT 242</td>
<td>Accident Investigation I</td>
<td>2.5</td>
<td>None</td>
<td>None</td>
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<td>This five-day seminar designed to develop the patrol officer into a competent on-scene accident investigator. Materials covered include the legal aspects of accident investigation, measuring and recording, roadway evaluation, vehicle evaluation, and determination of pre-collision speed. Approximately 20% of the instruction will take place in the field in practical application exercises.</td>
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<tr>
<td>CJCT 243</td>
<td>Accident Investigation II</td>
<td>2.5</td>
<td>Departmental Approval</td>
<td>CJCT 242</td>
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<td>Skills used in conducting follow-up investigations of collisions where negligent homicide or manslaughter charges may ensue will be taught. Classroom instruction will be supplemented with practical exercises. Course content includes preparing after-accident situation maps, mathematical calculations in traffic accident reconstruction, stopping times and distances, analyzing accident data, and field exercises.</td>
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<tr>
<td>CJCT 244</td>
<td>Accident Investigation III</td>
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<td>None</td>
<td>None</td>
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<td>This two-day seminar is designed to develop the officer's ability to take comprehensive photographs of serious traffic accidents, resulting in photos that are useful for investigation, reconstruction, and court purposes. The ideal candidate is the officer who has an adjustable camera and related equipment available but does not know how to use it.</td>
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<td>CJCT 245</td>
<td>Accident Investigation IV</td>
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<td>None</td>
<td>None</td>
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<td>A one-day program designed to develop the competence and abilities of the experienced accident investigator through the use and grid mapping of evidence at the traffic scene crime. Upon completion the officer will be able to apply the process in accident investigation and accident reconstruction for courtroom purposes.</td>
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<td>CJCT 246</td>
<td>Accident Investigation V</td>
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<td>None</td>
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<td>A one-day program to aid the investigating officer in determining whether tire failure contributed to the accident, and if so, whether the failure took place before, during, or after the collision.</td>
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<td>CJCT 247</td>
<td>Accident Investigation VI</td>
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<td>None</td>
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<td>A one-day program to assist the investigator in determining whether vehicle lamps were &quot;on&quot; or &quot;off&quot; at the time of impact.</td>
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<td>CJCT 248</td>
<td>Accident Investigation VII</td>
<td>1.5</td>
<td>None</td>
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<td>This three-day course will teach the fundamentals of investigating commercial vehicle accidents. Materials covered will include identifying vehicle components, driver qualifications, review of motor carrier safety rules, acceleration and deceleration factors in truck accidents, handling characteristics of commercial vehicles, drag factors, and spied determination.</td>
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<tr>
<td>CJCT 249</td>
<td>Accident Investigation VIII</td>
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<td>None</td>
<td>None</td>
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<td>This five-day training program is for the newly promoted criminal justice supervisor or those who have the potential for future promotion. Each participant will be exposed to forty hours of intensive training delivered by instructors who are highly qualified in their respective areas of expertise. The learning environment will provide practical hands-on exercises and student involvement.</td>
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<td>CJCT 253</td>
<td>Firstline Supervisor School</td>
<td>2.5</td>
<td>None</td>
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<td>Two-day program covering special techniques of investigating accidents involving lighter than usual vehicles such as mopeds, bicycles, and motorcycles. Course includes 50% field work.</td>
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</table>
CJCT 256 Drug Raids
Term Prerequisite: None
Semester Prerequisite: None
Two-day practical application workshop designed to provide law enforcement personnel with techniques for safe execution of drug raids. In addition to lecture and audio visual instruction, participants will work in teams conducting tactical exercises on the firing range.

CJCT 257 Law Enforcement Composite Sketching
Term Prerequisite: None
Semester Prerequisite: None
This five-day workshop is designed as a basic introduction to the field of composite drawing for law enforcement purposes. It is designed for those individuals who wish to become knowledgeable in the rendering and use of composites in criminal investigations. The class will emphasize hands-on instruction in the layout, set-up, and rendering of adequate composite drawing techniques and proper interviewing skills.

CJCT 259 Emergency Telecommunications Training
Term Prerequisite: None
Semester Prerequisite: None
This 50-hour workshop has been designed utilizing the most up-to-date information regarding techniques, regulations, legal issues, equipment, and resources for emergency dispatching. This workshop is specifically developed for individuals who are employed as police/fire/medical dispatchers or who seek a career in this field. Participants successfully completing will be state certified.

CJCT 260 First Responder
Term Prerequisite: None
Semester Prerequisite: None
This "first responder: recognizing and identifying hazardous materials" is designed to enable the police officer first responder, public safety officer, and specialized teams to develop basic skills which will reduce harm created by hazardous materials emergencies.

CJCT 263 Police Arson Investigation
Term Prerequisite: None
Semester Prerequisite: None
The overall course goal is to provide the law enforcement officer and investigator with the knowledge and basic skills needed upon arriving at a fire scene, along with investigative techniques utilized on suspected arsons.

CJCT 264 Leadership Academy
Term Prerequisite: None
Semester Prerequisite: None
An extensive course designed for professionals in the criminal justice system to develop leadership skills. This course is designed to develop professionalism, encourage innovation and progress, and provide for future leaders in criminal justice. This is a practical application course.

CJCT 265 Transitional 9MM
Term Prerequisite: None
Semester Prerequisite: None
The course is designed to help departments with a smooth transition to 9mm semi-automatic pistols.

CJCT 267 Security/Legal Aspect
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to assist security personnel in having a better understanding of legal issues and investigative techniques as related to the private security field.

CJCT 268 Positive Image/Police Officer
Term Prerequisite: None
Semester Prerequisite: None
Provides an honest look at what the public views to be negative police imaging. Course will identify negative police behaviors, present steps to replace them with positive behaviors, improve occupational futures of law enforcement personnel, and understand how positive behavior can increase public appreciation for police officers.

CJCT 269 Critical Incident Debriefing II
Term Prerequisite: None
Semester Prerequisite: None
This one-day workshop is designed for those law enforcement practitioners who participated in session I. It will address the nature of post-traumatic reactions and the basic steps in organizing an actual debriefing session.

CJCT 270 School Liaison
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to teach law enforcement personnel how to implement and present programs within their school system. There will be sharing of programs from other agencies and an outside resource demonstration. Students will also participate in workshops on techniques for developing and presenting a program.

CJCT 271 Mobile Field Force
Term Prerequisite: None
Semester Prerequisite: None
This three-day training session will deal with how police agencies respond to civil disturbances, union conflicts, public demonstrations, and other events involving large or disorderly crowds. The mobile field force system will instruct the participant on how to provide rapid, organized, and disciplined responses to these tactical situations.

CJCT 272 Homicide Investigation
Term Prerequisite: None
Semester Prerequisite: None
This three-day workshop designed to enhance the crime scene investigation in all aspects of homicide, with the focus on practical tactics, procedures, and forensic techniques to be used in an efficient and professional homicide investigation.

CJCT 273 Defensive Tactics Instructor
Term Prerequisite: None
Semester Prerequisite: None
This workshop is designed to establish in the participant the ability to instruct and demonstrate methods of subject control involving use of force, handcuffing and searching, pressure point management, joint manipulation, active countermeasures, impact weapons, and weapon retention.

CJCT 274 Shotgun Update
Term Prerequisite: None
Semester Prerequisite: None
This course teaches law enforcement officers the most modern combat survival techniques available today. On the average, officers do not receive enough training with their shotgun and consequently, do not use this very powerful weapon when it is needed.

CJCT 276 Sig Sauer Armorers
Term Prerequisite: None
Semester Prerequisite: None
This two-day seminar is an in-depth examination of the antecedent and structure of hard-core violence. Of particular concern will be examination of the nature and scope of drug-induced violence. A historical perspective of this phenomenon, reviewing patterns of abuse resulting in violent behavior, will be presented.

CJCT 280 Field Training Officers
Term Prerequisite: None
Semester Prerequisite: None
Practical, five-day seminar designed to equip law enforcement officers with the skills necessary to ensure effective "on-the-job" training and evaluation of probationary employees.

CJCT 281 Field Training/Supervisors
Term Prerequisite: None
Semester Prerequisite: None
Four-day training specifically designed for law enforcement administrators considering the implementation or upgrading of a formalized recruit/probationary officer field training and evaluation program.

CJCT 282 Security/Conflict Mediation
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to provide security officers with simple techniques to employ in diffusing volatile situations before violence occurs.

CJCT 283 Investigation State of Michigan
Term Prerequisite: None
Semester Prerequisite: None
One-day session for state investigators covering areas such as how to conduct an investigation, information, and its courses, writing an effective investigative report and background investigations.

CJCT 284 Advanced Interview
Term Prerequisite: None
Semester Prerequisite: None
Three-day training which will provide specific working tools and skill-building techniques for successful questioning. Format will include lecture, small group work, videotapes, and role-playing.
CJCT 285 Child Abuse and Neglect
Term Prerequisite: None
Semester Prerequisite: None
Officers, supervisors, and investigators may be involved in responding to child abuse and neglect in a family when they report or intervene in a case of suspected abuse or neglect. By making a report, officers begin the process of helping. By intervening, officers are acting to ensure protection for the child.

CJCT 286 Security Interview
Term Prerequisite: None
Semester Prerequisite: None
This workshop is designed to provide security personnel with the skills and techniques needed to conduct effective interviews and interrogations.

CJCT 289 Waiver/Training
Term Prerequisite: None
Semester Prerequisite: None
A five-day school to provide training in the areas of legal, firearms and traffic. In addition, there will be practical exercises in the firearms area. Course will provide knowledge necessary to successfully complete the Michigan Law Enforcement Officers Training Council testing for recertification as a police officer.

CJCT 291 Security/Technology
Term Prerequisite: None
Semester Prerequisite: None
One-day workshop designed for law enforcement and security officers to provide information on state-of-the-art crime and loss prevention technology. Program will cover the various aspects of alarm systems, access controls, and closed-circuit television.

CJUS 101 Introduction to Criminal Justice
Term Prerequisite: None
Semester Prerequisite: None
A survey course designed to provide students with a current, coordinated, and comprehensive overview of criminal justice as an institution and as a system. Emphasizes historical, philosophical, constitutional, and organizational perspectives.

CJUS 102 Crime Causes and Conditions
Term Prerequisite: None
Semester Prerequisite: None
Why do some individuals pursue a life of crime? This course introduces and analyzes the past, present, and future of criminology. Sociological, psychological, and biological factors are examined to determine their interaction with and impact on criminal behavior.

CJUS 103 Criminal Law
Term Prerequisite: CJ 101
Semester Prerequisite: CJUS 101
Study of substantive criminal law. Includes classification of crimes, common law concepts, and elements of specific crimes.

CJUS 106 Juvenile Problems: Control and Prevention I
Term Prerequisite: None
Semester Prerequisite: None
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.

CJUS 107 Juvenile Problems: Control and Prevention II
Term Prerequisite: CJ 106
Semester Prerequisite: CJUS 106
Focuses on police and court procedures established for dealing with juveniles with an emphasis on the Michigan juvenile justice system and the agencies connected to the system.

CJUS 113 Women and Men in Criminal Justice
Term Prerequisite: CJ 101, CJ 130, CJ 150
Semester Prerequisite: CJUS 101/CJUS 131/CJUS 150
Explores the issues of men, women, and a culturally diverse work force working together in criminal justice. Assists the student in surveying his/her own self-awareness, career awareness, cultural awareness and appropriate decision-making process.

CJUS 130 Ethics and Professionalism in Corrections
Term Prerequisite: None
Semester Prerequisite: None
This course will develop the professional skills mandatory to establish a successful career in corrections. Identifies areas needing additional development and includes improvement strategies.
CJUS 202 Criminal Justice Management and Supervision 2
Term Prerequisite: None
Semester Prerequisite: None
Identifying and analyzing managerial and supervisory functions in a diverse criminal justice work force. Focusing on the implementation of policy and procedures and upon the roles and responsibilities of supervising employees.

CJUS 203 Criminal Procedure 3
Term Prerequisite: CJ 101
Semester Prerequisite: CJUS 101, CJUS 103
Study of criminal procedural law. Includes laws of arrest, search and seizure, and admissibility of confessions; suspect identification and rules of evidence.

CJUS 204 Criminal Investigation 4
Term Prerequisite: CJ 101, CJ
Semester Prerequisite: CJUS 103
Examines the fundamentals of criminal investigation such as crime scene procedures, collection and preservation of physical evidence, interviewing, interrogation, and latent investigation.

CJUS 206 Interview and Interrogation 2
Term Prerequisite: None
Semester Prerequisite: None
Provides students with the techniques and procedures utilized in conducting lawful, admissible, and successful investigative interviews and interrogations.

CJUS 208 Organized Criminal Activity 2
Term Prerequisite: None
Semester Prerequisite: None
Provides a comprehensive overview of the nature, history and current status of organized crime. Analyzes the evolution of crime as an economic entity in legitimate, as well as illegitimate, areas of the business world.

CJUS 209 Patrol Operations 2
Term Prerequisite: None
Semester Prerequisite: None
Study of the basic patrol operations vital to law enforcement as a primary function. Emphasizes the concept of community policing and its impact and implications for the organization and the community.

CJUS 211 War on Drugs 2
Term Prerequisite: None
Semester Prerequisite: None
This is a survey course covering the impact of drugs upon society in terms of work, law enforcement, schools, prevention, treatment, prisons, and recovery programs and how it relates to the users, close family members, associates, or co-workers. Attention is given to what a criminal justice worker can do.

CJUS 215 The Criminal Mind 2
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the working of the criminal mind. Basic concepts of mental functioning will be addressed with emphasis on behavioral motivation in criminal conduct.

CJUS 216 Psychology of Sex Offenders 2
Term Prerequisite: None
Semester Prerequisite: None
Examines the motivation of the sexual offender; background, personality characteristics, and common behaviors. Investigative techniques and procedures are also emphasized.

CJUS 217 Psychology of Homicide 2
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the psychodynamics of homicide that establishes the basis of behavioral analysis and the fundamentals of crime scene investigation.

CJUS 235 Basic Firearms 3
Term Prerequisite: Program Approval
Semester Prerequisite: Departmental Approval, 30 Credits Completed
Provides basic marksmanship, safety rules and regulations, range procedures, nomenclature and function of the various types of weapons.

CJUS 236 Basic Combat Firearms 3
Term Prerequisite: Departmental Approval, CJ 235
Semester Prerequisite: Departmental Approval, CJUS 235
Intermediate instruction as a transition from basic's eye to field and combat shooting.

CJUS 242 Unarmed Defense 3
Term Prerequisite: None
Semester Prerequisite: None
Hands-on techniques to prepare students to properly and effectively handle law enforcement related physical confrontations. Includes use of force decision-making skills, pressure points, control holds, and handcuffing.

CJUS 245 Report Writing in Criminal Justice 2
Term Prerequisite: CJ 101, CJ 130/CJ 150
Semester Prerequisite: CJUS 101/CJUS 131/CJUS 150
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.

CJUS 248 Physical Fitness for Criminal Justice 3
Term Prerequisite: None
Semester Prerequisite: None
Designed to assist the students in developing and enhancing their level of health and physical fitness in order that they may successfully complete certification and re-certification physical fitness criteria established in law enforcement and corrections. The course includes aerobic, strength building and stretching exercises along with nutrition information.

CJUS 250 Correctional Institutions 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: CJUS 101/CJUS 130
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.

CJUS 251 Correctional Clients 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: CJUS 101/CJUS 130
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.

CJUS 252 Community Based Corrections 3
Term Prerequisite: CJ 130/CJ 101
Semester Prerequisite: CJUS 101/CJUS 131
This course examines in detail the multitude of programs and services at the local level for the treatment of the offender. The impact of certain political, economic, and societal influences on corrections will also be reviewed.

CJUS 255 Human Relations in Criminal Justice 3
Term Prerequisite: CJ 130
Semester Prerequisite: CJUS 101/CJUS 130
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.

CJUS 258 Criminal Investigation and Procedures 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed for hands-on, practical instruction in the following areas: crime scene processing, on-scene preliminary investigation, witness interviewing, suspect identification, latent prints, photography, child abuse, sexual assault, narcotics, and preparation for court.

CJUS 261 Michigan Criminal Law and Procedure 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed for hands-on, practical instruction in criminal law and procedure as it pertains to law enforcement in the state of Michigan. Topics include crimes against persons and property, regulatory crimes, public order crimes, juvenile law, admissions/confessions, laws of arrest, search and seizure, and suspect identification.

CJUS 262 Patrol Procedures and Tactics 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
The course is designed to identify and utilize proper patrol techniques and procedures necessary for a police officer to function safely and effectively. Topics include preparation for patrol, types of patrol, responding to crimes in progress, roadblocks, civil process, handling abnormal persons, and officer survival.

CJUS 263 Standard First Aid 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed to identify the roles and responsibility of a law enforcement officer at the scene of a medical emergency based upon American Red Cross standard first aid and CPR training.

CJUS 264 Report Writing in Law Enforcement 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed to prepare the student to effectively and efficiently write a proper police report that will serve as a basis for the issuance of a warrant and court prosecution. Topics include obtaining information, basic English skills, criminal justice terminology, and proper formatting.
CJUS 265 Highway Traffic Operations
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to familiarize the student with the proper procedures for traffic control and enforcement. Emphasizes state motor vehicle laws and procedures, arrests and citations, O.U.I., and accident investigation.

CJUS 266 Basic Police Science
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
The course studies are concerned with technical and physical techniques employed in the investigation of crime. The course involves traditional classroom as well as field experiences.

CJUS 267 Law Enforcement Physical Training
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed to assist law enforcement students in developing and improving their physical fitness. The course includes running, aerobics, calisthenics, and stretching.

CJUS 268 Precision Driving
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
The course is designed to identify and utilize proper driving techniques and procedures using the principles of precision driving. Course involves both classroom and hands-on driving.

CJUS 270 Computers in Security
Term Prerequisite: CJ 152
Semester Prerequisite: CJUS 152
This course will explore the role of computers in security, both currently and in the future. The role of the computer will be studied from two perspectives: (1) the computer's impact on criminal behavior, and (2) the computer's role as a tool in the performance of the security function.

CJUS 271 Computer Fraud
Term Prerequisite: Program Approval
Semester Prerequisite: Departmental Approval
This course deals with computer fraud prevention, detection, investigation, loss recovery, and risk management. Emphasizes computer-assisted or computer-related crimes such as theft of money, merchandise, and inventory, negotiable securities, services, data, and software, and data misrepresentations.

CJUS 281 Directed Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Sixteen hours of study and research is assigned per credit. Students are given criminal justice-related research assignments which will introduce them to research procedures and resources.

CJUS 282 Directed Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Sixteen hours of study and research is assigned per credit. Students are given criminal justice-related research assignments which will introduce them to research procedures and resources.

CJUS 283 Directed Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Sixteen hours of study and research is assigned per credit. Students are given criminal justice related research assignments which will introduce them to research procedures and resources.

CJUS 285 Law Enforcement Field Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Sixteen-eight-hour shifts are scheduled with an approved police department. Written reports are required.

CJUS 286 Corrections Field Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
The student will be placed in a local or state corrections facility that will allow him/her to experience many facets of correctional operations. Weekly written reports are required and periodic meetings are mandatory. A minimum of 160 hours is required.

CNCP 110 Foundations of CNC Programming
Term Prerequisite: ATM 153
Semester Prerequisite: TECH 101, TECH 130, DTDS 110, MACH 105
This course lays the foundation for all other Computerized Numerical Control (CNC) courses. Methods of CNC programming including linear, circular and helical interpolation, 2-axis cycles, roughing and pocketing cycles, tool diameter compensation, macros, and subroutines are examined. Students will write programs for 3-axis and 5-axis mills, 3-axis lathe, and 4-axis wire-EDM.

CNCP 130 Machine Controls and Set-up
Term Prerequisite: CNC 102, CNC 104
Semester Prerequisite: CNCP 110
Focuses on the set up and operation of a variety of CNC machines, ranging from simple 3-axis to sophisticated 5-axis conversational controls. Topics will include proper machine start up and shut down, tool data management, fixture alignment, program loading and editing.

CNCP 194 Computerized Numerical Control Project Lab
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Further skills are pursued involving modern concepts of numerical control of machine tools, including the interrelationship of these new manufacturing methods in the various departments of a company.

CNCP 200 CADAM NC
Term Prerequisite: CG 201, CNC 104
Semester Prerequisite: CNCP 110
CADAM NC (Numerical Control) is a mainframe-based Computer Aided Manufacturing software used to graphically program CNC machine tools. Course topics will cover preparation of drawings for programming, basic APT programming, Aux word tables, 2-D surface profiling, 3-D surface contouring, multi-axis programming, and Overlay features. Selected programs will be run on CNC machines.

CNCP 210 SMART-CAM
Term Prerequisite: CNC 102
Semester Prerequisite: CNCP 200
SMART-CAM is a powerful graphics based programming software for CNC machine tools. SMART-CAM software is designed to generate CNC programs from mechanical CAD drawings. Students will use SMART-CAM to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment.

CNCP 215 Solutions 3000
Term Prerequisite: CNC 104
Semester Prerequisite: CNCP 110
Solutions 3000 is an advanced 3-D surface design and CNC software. This course will cover surface creation including Bzier and NURBS, primitives such as cones and toroids, and surface filling. Full 3-axis CNC programs will be created, run, and checked on a coordinate measuring machine.

CNCP 284 CNC Seminar
Term Prerequisite: None
Semester Prerequisite: None
This seminar may deal with a variety of subjects dealing with modern concepts of numerical control of machine tools, including the interrelationship of these new manufacturing methods in the various departments of a company.

COOP 211 Cooperative Education (Automotive)
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trainee in a planned, structured and supervised work experience. Students apply knowledge and skills learned in academic courses to real world situations.

COOP 221 Cooperative Education (Aviation)
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trainee in a planned, structured and supervised work experience. Students apply knowledge and skills learned in academic courses to real world situations.

COOP 231 Cooperative Education (Manufacturing)
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trainee in a planned, structured and supervised work experience. Students apply knowledge and skills learned in academic courses to real world situations.

COOP 241 Cooperative Education (Construction and Engineering)
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trainee in a planned, structured and supervised work experience. Students apply knowledge and skills learned in academic courses to real world situations.

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CPSC 120 Introduction to Computers 3
Term Prerequisite: None
Semester Prerequisite: None
Beginning instruction and practice are provided in word processing, spreadsheet applications, the programming language BASIC, and user networks. In addition, the student learns the application of computers in society, considers their social and economic implications, examines questions of privacy and security, and considers recent advances in computer technology.

CPSC 130 BASIC and Graphics 3
Term Prerequisite: Placement Test, Experience in BASIC
Semester Prerequisite: MATH 061/062, Experience in BASIC
This course is intended to provide students with a background in programming using an extended version of the language BASIC. Primary focus is on learning the language and standard methods of structured programming by writing programs. Top-down design and stepwise refinement are emphasized in algorithm development and problem-solving.

CPSC 159 FORTRAN 3
Term Prerequisite: MTH 165
Semester Prerequisite: MATH 122/MATH 126
Structured programming techniques are applied in the design of algorithms and their implementation in FORTRAN 77. Topics include Niasi-Schneiderman designs, stepwise refinement outlines, control structures, functions and subroutines, input and output procedures, data types, arrays, and string processing.

CPSC 230 Algorithms and Pascal 4
Term Prerequisite: MTH 213
Semester Prerequisite: MATH 151
Course will establish an understanding of computational procedures which form the basis for continuing study in computer science. Techniques of top-down design are applied in the design of algorithms. Topics include Niasi-Schneiderman designs, stepwise refinement outlines, control structures, functions, procedures, input and output operations, data types, arrays, and string processing.

CPSC 240 C Programming 2
Term Prerequisite: CPS 250/CPS 255
Semester Prerequisite: CPSC 230/Departmental Approval
A course in the language C for students with programming experience. Topics include functions, strings, arrays, file access, pointers, bitwise operations, storage classes, dynamic allocation and data structures. Knowledge of data structures is helpful.

CPSC 260 Discrete Structures in Computer Science 4
Term Prerequisite: CPS 250/255, MTH 213
Semester Prerequisite: MATH 151, CPSC 150/CPSC 230
Introduction to logic and algebraic structures and techniques required for further study in computer science. Topics include statement logic and proof techniques, relations, functions, directed and undirected graphs and their matrix representations, Boolean algebras and logic networks, error correcting codes, regular expressions, finite-state machines. Turing machines, and unsolvable decision problems.

CPSC 270 Assembly Language and Computer Organization 4
Term Prerequisite: CPS 250/255, MTH 215
Semester Prerequisite: CPSC 230
An introduction for computer science majors to machine structure, registers, and operations, as implemented on DEC/VAX minicomputers. Assembler, loader, and execution tasks are delineated. Internal mathematical representation of data and related algorithms are studied.

CPSC 280 Data Structures 4
Term Prerequisite: CPS 255
Semester Prerequisite: CPSC 230
Advanced techniques and related theory for representation and access of information. Algorithms concerning sorting, searching, hashing and graph representation are included. Program analysis and abstract data types including stacks, queues, and trees are also studied.

CPSC 290 VAX System Support 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An introduction to Digital VAX Computer systems. Projects to be completed will cover VAX hardware and software systems, including DCL (Digital Command Language), LMS (Learning Management System), spreadsheets, text and word processing software, graphics software, and networking software.

CPSC 295 Independent Study in Computer Science 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes three or more hours per week to this study in addition to their work with the assigned instructor.

CPSC 296 Independent Study in Computer Science 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes six or more hours per week to this study in addition to their work with the assigned instructor.

CPSC 297 Independent Study in Computer Science 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes nine or more hours per week to this study in addition to their work with the assigned instructor.

CPSC 298 Independent Study in Computer Science 4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes twelve or more hours per week to this study in addition to their work with the assigned instructor.

CUIA 102 Credit Union Accounting 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course emphasizes those areas of financial accounting relevant to external reporting by credit unions.

CUIA 202 Risk Management 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course familiarizes the student with the risk management process: identification, measurement and evaluation, and control and financing. The course is designed to help participants prepare for the Certified Credit Union Executive Program (CCUE) examination.

CUMA 100 Introduction to Credit Union Operations 3
Term Prerequisite: None
Semester Prerequisite: None
This course provides students with an overview of the credit union movement, its position in the financial services industry, and basic credit union operating procedures. Directed toward staff, management, and elected officials of credit unions who wish to increase their knowledge of both the credit union movement and operations.

CUMA 200 Credit and Collections 3
Term Prerequisite: None
Semester Prerequisite: None
This course covers the basic fundamentals of the credit/collect industry. Emphasis on learning the basics of the credit decision and the collection of past due loans. The course is designed for credit union personnel who want to better understand the relevant laws and regulations of credit union credit and collections.

CUMA 201 Credit Union Financial Counseling 2
Term Prerequisite: None
Semester Prerequisite: None
This course is an overview of financial counseling techniques and skills for credit union employees. Emphasis is placed on skill-building exercises to enable students to develop a basic understanding of financial alternatives available to their customers.

CUMA 215 Business Law for Credit Unions 3
Term Prerequisite: None
Semester Prerequisite: None
This course covers fundamental principles of law applicable to credit union personnel. The course will prepare students to perform the legal responsibilities of their jobs more knowledgeably. Course content includes study of contracts, personal and real property, torts, crimes and the nature and sources of law as related to credit union operations.

DADH 110 Oral Health Practices 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Introduction to dental anatomy and physiology, aseptic techniques, care of periodontal disease processes and oral hygiene procedures to prevent diseases. Small group laboratory instruction allows the student to learn through investigation, involvement and application. Each student will become successful in maintaining his/her own good oral health.

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DADH 112 Dental Anatomy

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program

Stud y of nomenclature, morphologic characteristics and physiologic relationships of human primary and permanent teeth. Laboratory activities develop observation and dexterity skills while studying tooth morphology and visible anatomic structures relative to DADH procedures.

DADH 124 Dental Radiography

Term Prerequisite: DHA 111, DHA 121
Semester Prerequisite: DHYG 111/DAST 111, DADH 112

Lectures discuss production and emission of dental x-radiation, indications for exposure, techniques of exposure, processing, evaluation and interpretation of dental radiographs. Individualized laboratory sessions provide students practice in exposing, processing, mounting and evaluating radiographs.

DANC 100 Introduction to Dance

Term Prerequisite: None
Semester Prerequisite: None

This course is designed for the student with no dance experience. The student will explore the basic techniques of the core dance forms including ballet, modern, tap and jazz. Movement, music, and application of all disciplines will be introduced.

DANC 101 Beginning Ballet I

Term Prerequisite: None
Semester Prerequisite: None

This course includes basic alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning dance student with no experience in dance. Basic barre and center floor combinations will be included.

DANC 102 Beginning Modern Dance I

Term Prerequisite: None
Semester Prerequisite: None

Basic alignment training techniques, spatial relationships, and elementary combinations for the beginning dance student. Some improvisation will be used throughout the course to assist in developing kinesthetic, spatial, cognitive, and physical awareness.

DANC 103 Beginning Jazz I

Term Prerequisite: None
Semester Prerequisite: None

This course includes basic alignment, warm up, and isolation in jazz dance technique for the beginning dance student. Spatial relationships and rhythm are emphasized.

DANC 104 Beginning Tap I

Term Prerequisite: None
Semester Prerequisite: None

This course includes basic tap origins, vocabulary, steps, combinations, and rhythms for the beginning dance student. Basic alignment training techniques, spatial relationships, and elementary combinations are explored.

DANC 111 Beginning Ballet II

Term Prerequisite: DNC 107
Semester Prerequisite: DANC 101

Emphasis is placed on theory of ballet movement and the increased use of ballet combinations. It includes a continuation of vocabulary, steps, and combinations.

DANC 112 Beginning Modern Dance II

Term Prerequisite: DNC 101
Semester Prerequisite: DANC 102

Designed for the student who has successfully completed Beginning Modern I, this includes a continuation of alignment training techniques, spatial relationships, dance combinations, and an introduction to modern dance theory. Improvisation will be used to develop kinesthetic, spatial, cognitive, and physical awareness.

DANC 113 Beginning Jazz II

Term Prerequisite: DNC 140
Semester Prerequisite: DANC 103

Emphasis is placed on developing a personal style of movement in preparation for performance. Course includes a continuation of alignment, warm-up, and isolations in addition to rhythms and combinations.

DANC 114 Beginning Tap II

Term Prerequisite: DNC 133
Semester Prerequisite: DANC 104

Emphasis is placed on increased complexity in rhythms and combinations. Course includes a continuation of tap vocabulary, steps, combinations, and rhythms.

DANC 121 Beginning Ballet III

Term Prerequisite: DNC 109
Semester Prerequisite: DANC 111

Emphasis is placed on longer combinations in preparation for performance. It includes a continuation of vocabulary, steps, and combinations.

DANC 122 Beginning Modern III

Term Prerequisite: DNC 102
Semester Prerequisite: DANC 124

With a focus on dance as a symbol, this includes a continuation of alignment training, spatial relationships, dance combinations, and improvisation. Emphasis is placed on longer combinations and basic choreographic techniques in preparation for performance.

DANC 123 Choreography I

Term Prerequisite: DNC 192
Semester Prerequisite: DANC 124

This course is designed to acquaint the student with basic choreographic techniques. Improvisation is utilized to explore ideas. Dance elements of time, space, and energy will be explored in addition to the mechanical and gestural aspects of movement. The concept of language and symbol system is studied.

DANC 124 Improvisation

Term Prerequisite: DNC 101, 107/140
Semester Prerequisite: DANC 101, 102/103

This course is designed for the major and non-major student. It will provide students with opportunities for the use of creative thinking by solving movement problems. Temporal and spatial aspects will be utilized. Reasoning and use of improvisation are discussed.

DANC 127 Performance Techniques

Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval

This course is designed to acquaint the level II student with the practice of performing. Emphasis is placed on projection, musicality, flow, articulation, clarity of intent, motivation, phrasing, gesture, and production process.

DANC 131 Character Dance

Term Prerequisite: None
Semester Prerequisite: None

This course is designed to provide students with a basic knowledge of character dance as applied to classical ballet dance. Emphasis is placed on Eastern European styles such as Czardas and Mazurka in addition to Spanish.

DANC 132 Spanish Dance

Term Prerequisite: None
Semester Prerequisite: None

This course is designed for the beginning level student. It is an introduction to the origins and techniques of Spanish dance as performed in Spain. Included are traditional music, footwork, body work, costumes, customs, and use of castanets.

DANC 133 Ethnic Dance Workshop

Term Prerequisite: None
Semester Prerequisite: None

Ethnic Dance class will provide instruction in warm-up exercises, combinations, and routines or dance indigenous to a given culture. Each term the content of this class will concentrate on the dance traditions of a different culture including African, Mexican, Oriental, European, or Slavic. Students will comprehend the specific culture through its dance form and understand its history, social customs, religion, and other cultural elements.

DANC 134 African Dance

Term Prerequisite: None
Semester Prerequisite: None

This course is designed for the beginning level student. It is an introduction to the origins and techniques of African dance as performed in various African countries. Included are traditional music, footwork, body work, costumes, and customs.

DANC 135 Tai Chi

Term Prerequisite: None
Semester Prerequisite: None

Introduction to Zazen meditation and basic principles of Tai Chi. Course covers the first seventeen movements in the Yang school of Tai Chi Chuan.

DANC 136 Dance Exercise

Term Prerequisite: None
Semester Prerequisite: None

This course includes warm-ups and exercises from various dance genres including ballet, modern, and jazz designed to develop flexibility, strength and coordination. Emphasis is placed on toning and stretching.
DANC 142 Ballroom Swing I
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the techniques, patterns, music, and style of swing dances. Includes evaluations of the differences in movement, rhythms, and techniques of various styles.

DANC 143 Ballroom Western Swing
Term Prerequisite: None
Semester Prerequisite: None
Techniques, patterns, movements, and styles of Western swing dancing. Includes evaluations of the differences in movement, rhythms, and techniques of various styles.

DANC 145 Ballroom Swing II
Term Prerequisite: DNC 291
Semester Prerequisite: DANC 142
Course designed to build on the techniques introduced in Ballroom Swing I. New steps will be introduced.

DANC 151 Ballroom Bronze I Workshop
Term Prerequisite: None
Semester Prerequisite: None
Study of traditional ballroom techniques in cha-cha, samba, tango and rumba. Enrollment with partner recommended.

DANC 153 Cha Cha/Mambo Workshop
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Introductory course in the Latin ballroom dances cha-cha and mambo covering basic components of partnership dancing and basic patterns of movement, footwork, technique, and style.

DANC 154 Tango/Samba Workshop
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Introductory course in the Latin ballroom dances tango and samba, covering basic components of partnership dancing and basic patterns of movement, footwork, technique, and style.

DANC 155 Ballroom Hustle Workshop
Term Prerequisite: None
Semester Prerequisite: None
Designed to introduce students to hustle dance steps and styling. Emphasis is on effective partnering, mastering basic patterns, and adapting dance to various tempos of music. Class usually includes field trips to local dance venues.

DANC 156 Ballroom Bronze Workshop II
Term Prerequisite: DNR 216
Semester Prerequisite: DANC 151
Advanced workshop in traditional ballroom techniques. Emphasis will be placed on dance styles and work will include cha-cha, mambo, waltz, foxtrot, and swing.

DANC 161 Ballet Repertory
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed for the student who has reached a Beginning Ballet III level. The student participates in the process of auditions, rehearsals, and public performances in the ballet genre and concentrates on memorization, projection, and musicality.

DANC 162 Modern Dance Repertory
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed for the student who has reached a minimum of Modern Beginning II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in the modern dance genre and concentrates on memorization, projection, and musicality.

DANC 163 Jazz Repertory
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed for the student who has reached a minimum of Beginning Jazz II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in jazz genre and concentrates on memorization, projection, and musicality.

DANC 164 Tap Repertory
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed for the student who has reached a minimum of Beginning Tap II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in the tap genre and concentrates on memorization, projection, and musicality.

DANC 171 Master Ballet
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This is a master ballet class for the level III or above ballet student. It is conducted by a professional dancer/instructor in residence. Classes are scheduled in concentrated sessions.

DANC 172 Master Modern
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This is a master modern class for the level III or above modern student. It is conducted by a professional dancer/instructor in residence. Classes are scheduled in concentrated sessions.

DANC 173 Master Tap/Jazz
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This is a master tap/jazz class for the level III or above tap/jazz student. It is conducted by a professional dancer/instructor in residence. Classes are scheduled in concentrated sessions.

DANC 191 Dance History
Term Prerequisite: None
Semester Prerequisite: None
This course is a dance history overview commencing with the origins of ballet to the present. Important developments and contributors in the field of American dance education will be interwoven with the important developments and contributors of Western dance forms.

DANC 192 Dance Appreciation
Term Prerequisite: None
Semester Prerequisite: None
For the major and non-major, this course is designed to increase the awareness of dance as a form of nonverbal communication between self and other throughout time and culture. Overviews of historical development and cultural concepts in dance will be explored with particular emphasis on Western concert dance traditions.

DANC 193 Dance Anatomy
Term Prerequisite: DNC 101, 107/140
Semester Prerequisite: DANC 101, 102/102
This course is an introduction to basic anatomy as it applies to dance. Terminology, practical application, theory of movement, nutrition, and injury prevention and care will be incorporated. Emphasis will be placed on major muscles, muscle groups, and skeletal structure.

DANC 201 Intermediate Ballet I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Emphasis is placed on center floor transitional techniques and dance dynamics and development of personal style. Course includes a continuation of vocabulary, steps, and combinations.

DANC 202 Intermediate Modern I
Term Prerequisite: DNC 139
Semester Prerequisite: DANC 122
Emphasis will be placed on development of personal dance style. Course includes a continuation of alignment training, spatial relationships, dance combinations, improvisation, and dance as symbol.

DANC 203 Intermediate Jazz
Term Prerequisite: DNC 143/144
Semester Prerequisite: DANC 115
Emphasis is placed on developing a personal style of movement. Course includes a continuation of alignments, warm-up and isolations in addition to more complex rhythms and combinations.

DANC 204 Intermediate Tap
Term Prerequisite: DNC 134/135
Semester Prerequisite: DANC 114
Emphasis is placed on increased complexity of rhythms and combinations in order to develop a personal style in preparation for performance.

DANC 211 Intermediate Ballet II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Emphasis is placed on development of center floor transitional techniques and dance dynamics in preparation for performance. Course includes a continuation of vocabulary, steps, and combinations.

DANC 212 Intermediate Modern Dance II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Emphasis will be placed on continued development of personal dance style and technique development in preparation for performance. Course includes a continuation of alignment training techniques, spatial relationships, dance combinations, improvisation, and dance as symbol.
DAN C 221  Advanced Ballet I 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
Emphasis is placed on learning traditional styles and choreography. Course includes a continuation of vocabulary and steps, as well as longer combinations, center floor transitional techniques, dance dynamics, and continued development of personal style.

DAN C 223  Advanced Jazz 
Term Prerequisite: DNG 170 
Semester Prerequisite: DNG 202 
Emphasis is placed on learning different styles of jazz dance appropriate to different performance needs. Course includes continuation of alignment, warm-up and isolation in addition to more complex rhythms and combinations.

DAN C 224  Advanced Tap 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
Emphasis is placed on learning a variety of tap styles suitable for different performance needs.

DAN C 231  Advanced Ballet II 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
Emphasis is placed on learning traditional choreography. Course includes a continuation of vocabulary, steps and combinations, center floor transitional techniques, dance dynamics and continued development of personal style.

DAN C 244  Pointe Technique Beginning 
Term Prerequisite: DNG 129/Higher Level Course 
Semester Prerequisite: DNG 121/Higher Level Course 
Emphasis is placed on elementary pointe technique exercises to strengthen ankles, calves, legs and lower back for pointe work. This course is designed for the intermediate level ballet student. Pointe technique continues the development of strength, coordination, flexibility, and balance.

DAN C 245  Choreography II 
Term Prerequisite: DNG 110 
Semester Prerequisite: DNG 123 
Emphasis is placed on group manipulation in addition to developing individual styles of choreography. Preparation of choreography for performance in emphasized.

DAN C 248  Pointe Technique Intermediate 
Term Prerequisite: DNG 110 
Semester Prerequisite: DNG 244 
Emphasis is placed on more difficult exercises, steps, and combinations to prepare for performance. Course includes a continuation of development in strength, coordination, flexibility, and balance.

DAN C 251  Independent Study I 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is for dance majors who wish to devote time to research projects, choreography, assigned teaching projects, and other dance-related topics not covered in existing classes. Student will meet with instructor periodically throughout the semester.

DAN C 252  Independent Study II 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is for dance majors who wish to devote time to research projects, choreography, assigned teaching projects, and other dance-related topics not covered in existing classes. Student will meet with instructor periodically throughout the semester.

DAN C 253  Independent Study III 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is for dance majors who wish to devote time to research projects, choreography, assigned teaching projects, and other dance-related topics not covered in existing classes. Student will meet with instructor periodically throughout the semester.

DAN C 281  Dance Teaching Methods 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is designed to acquaint the intermediate student with the various teaching styles. Goals, objectives, and strategies of class construction are discussed. Emphasis is placed on creativity, attitude, perception, and intuition in the classroom.

DAN C 282  Dance Teaching Assistantship 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is designed for the beginning teacher. Under the guidance of a faculty member in the student's primary discipline, the student will learn to implement the use of goals, objectives, and strategies in class preparation by co-teaching a beginning level course.

DAN C 283  Dance Teaching Practicum 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is designed to enable the student to teach a dance course at the beginning level in the student's primary discipline under the guidance of an instructor. Implementation of objectives and strategies will enable the student to prepare a fully articulated course.

DAN C 284  Studio and Recital Management 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is designed to introduce basic concepts of the development, growth, and maintenance of a dance studio. Operational and administrative procedures are emphasized for the dance studio as well as for recitals and other performance activities.

DAN C 285  Dance Performance Internship 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
This course is designed to enable the student to work in the community as a choreographer under the guidance of an instructor. Course projects may range in scope from choreographing a piece for a dance studio recital to choreographing a musical for a local community theatre.

DAN C 295  Directed Studies I 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings.

DAN C 296  Directed Studies II 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings.

DAN C 297  Directed Studies III 
Term Prerequisite: Departmental Approval 
Semester Prerequisite: Departmental Approval 
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings.

DAST 111  Preclinical Tech - DA 
Term Prerequisite: DHA 110, 111, 112 
Semester Prerequisite: Admission to Program 
Through lecture and simulated clinical experience the student will be introduced to dental procedures: four-handed chairside assisting, preparation of chairside dental materials, charting, management of clinical records, and taking and recording vital signs.

DAST 113  Oral Anatomy 
Term Prerequisite: DHA 111 
Semester Prerequisite: Admission to Program 
A study of head and neck anatomy and its histologic and embryologic development. A basic review of oral pathology is also included.

DAST 118  Dental Assisting Seminar 
Term Prerequisite: DA 110, 120 
Semester Prerequisite: Admission to Program 
Various aspects of the dental profession are discussed to prepare the student dental assistant for entry to the health team. Subjects include: dental law, ethics, liability, health profession organizations, employment, and current health-care issues.

DAST 120  Clinical Dental Assisting 
Term Prerequisite: DA 120 
Semester Prerequisite: DADH 110, 112, DAST 111, 113 
A study of the clinical practice of four-handed chairside dental assisting with emphasis on general restorative and dental specialty procedures. Sessions correlate clinical procedures and practice with private practice and field experience participation.
DAST 122 Dental Pharmacology-Dental Assisting
Term Prerequisite: Admission to Second Year of Dental Assisting
Semester Prerequisite: DADH 110, DAST 111, 113
A study of the administration, use, action and effects of drugs most commonly used by patients. Correlation of this information with 1) taking a good medical history and 2) planning and implementing dental procedures, is emphasized.

DAST 126 Registered Dental Assistant Procedures for the Dental Assistant
Term Prerequisite: DA 210, 211
Semester Prerequisite: DADH 110, 112, DAST 111, 113
A study of the intra-oral functions delegated to the licensed Registered Dental Assistant in the State of Michigan. Laboratory time is provided for the student to learn the techniques and gain proficiency in those procedures that will be performed with a licensed dentist in DAST 120.

DAST 128 Dental Materials
Term Prerequisite: Admission to Second Year of Dental Assisting
Semester Prerequisite: DADH 110, 112, DAST 111, 113
Lecture and laboratory sessions address the properties, selection, manipulation and evaluation of materials used in dentistry. Practice is provided in the preparation, manipulation, and delivery of the materials most often handled by the dental assistant.

DAST 130 Clinical Practice and Patient Relations
Term Prerequisite: Admission to Program
Semester Prerequisite: DAST 120, 122, 126, 128, DAST 124
Lecture sessions teach basic communication, writing, and psychology skills needed for effective dental office management and chairside assisting. Students practice these skills during laboratory simulations. Field experience assignments provide on-site practice and integration of dental assisting chairside, specialty, RDA, and interpersonal skills.

DHGY 111 Preclinical Technics - DH
Term Prerequisite: DHA 110, 111, 112
Semester Prerequisite: Admission to Program
Introduction to selection and application of prophylaxis instruments, collection and assessment of patient data, and performing oral examinations. Small group clinic instruction includes implementation of procedures on student partners.

DHGY 113 Head and Neck Anatomy
Term Prerequisite: DHA 111
Semester Prerequisite: Admission to Program
A descriptive anatomical study of the head and neck regions, including skeletal, nervous, circulatory, lymphatic, and muscular systems and their relationship to clinical procedures.

DHGY 114 Oral Histology, Embryology and Pathology
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Study of the embryology and microscopic anatomy of the oral cavity, with emphasis on the developmental growth process. Diseases affecting these tissues, including the principles of inflammation and repair, developmental disturbances, stains and acroclusions, diseases of the teeth and supporting structures, oral infections, injuries and neoplasms are included.

DHGY 116 Dental Emergency Procedures
Term Prerequisite: DHA 110, 112
Semester Prerequisite: Admission to Program
Students study dental emergencies (recognition, prevention, and effective care). Experience is provided in monitoring vital signs and handling emergency simulations. CPR certification is earned.

DHGY 118 Dental Hygiene Seminar
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
The student receives an overview of dental history, basic dental law, the dental health team, professional organizations, professionalism, and a code of ethics.

DHGY 120 Clinical Dental Hygiene I
Term Prerequisite: DH 120, DH 122
Semester Prerequisite: DADH 110, 112, DHGY 111-114
Initial clinical practice of basic dental hygiene services (recognition and recording of oral conditions, medical history, oral health education, prophylaxis, fluoride treatment, sterilization, radiography, and desk procedures). Lecture and laboratory sessions further develop skills in treatment planning, patient home care, periodontal examination, caries detection, instrument sharpening, and clinical photography.

DHGY 122 Dental Pharmacology-Dental Hygiene
Term Prerequisite: DHA 111, 112
Semester Prerequisite: DADH 110, DHGY 113
A study of the administration, use, action, and effects of drugs most commonly used by patients and their relationship to dental treatment and dental hygiene procedures.

DHGY 125 Principles of Periodontics
Term Prerequisite: DH 111, DHA 111
Semester Prerequisite: DADH 110, 112, DHGY 114
Study of anatomy, physiology, and histology of the periodontal tissues as they relate to the identification, etiology, prevention and treatment of periodontal disease and its sequelae. Consideration of disease status, diagnosis, patient management, and disease prevention is presented relative to the hygienist's role as co-therapist in private practice.

DHGY 128 Dental Materials and Methods
Term Prerequisite: DH 210, 211
Semester Prerequisite: DADH 110, 112, DHGY 111, 113
Study of terminology, selection, manipulation, and evaluation of materials used in dentistry. Activities emphasize procedures and materials utilized by the dental hygienist and the knowledge needed to educate the patients regarding the benefi t of certain restorative procedures.

DHGY 210 Clinical Dental Hygiene II
Term Prerequisite: DH 130
Semester Prerequisite: DHGY 120, 122, 124, 126
Continuation of clinical, perfecting comprehensive treatment planning and advanced prophylaxis techniques (deep scaling, root planing, nutritional counseling, ultrasonic scaling, and use of chemotherapeutic agents). Course coordinates the periodontal case study, advanced patient care and management, and review of ethical case studies.

DHGY 212 Advanced Dental Hygiene Procedures
Term Prerequisite: DH 122, DH 130
Semester Prerequisite: DHGY 120-126
Study of advanced clinical dental hygiene procedures with emphasis on the hygienist's role as co-therapist in performing root planing, ultrasonic instrumentation, periodontal charting, nutritional counseling, and applying chemotherapeutic agents.

DHGY 214 Clinical Oral Pathology
Term Prerequisite: DH 130, DHA 131
Semester Prerequisite: DHGY 120, 126, DADH 124
Case histories are presented in which the student’s objective is to formulate a differential diagnosis of an unknown oral lesion and propose a rational approach for evaluation and treatment of the patient. Lecture will include oral surgery practices and procedures.

DHGY 215 Special Patient Care
Term Prerequisite: DH 130, DHA 122
Semester Prerequisite: DHGY 120, 122
Students develop a philosophy for the management and oral health care of the handicapped: people with physical, mental, social/emotional and selected medical conditions, as well as the elderly or medically compromised.

DHGY 218 Periodontal Therapies
Term Prerequisite: DH 210, 212
Semester Prerequisite: DHGY 120, 126
Principles of periodontics is applied to treatment modalities. The dental hygienist's cotherapist role in the prevention, identification and treatment of periodontal disease is applied. Students complete a periodontal case study to demonstrate appropriate implementation of their periodontal knowledge and therapy skills.

DHGY 218 Nutrition and Oral Health
Term Prerequisite: DH 110
Semester Prerequisite: DADH 110
Discussion of the identification, function, metabolism, and sources of specific nutrients required for normal growth, development, and repair of tissues. Application of principles to the individual's nutritional needs; providing nutritional counseling and diet information to special needs patients; and the relationship of nutrition to oral health is emphasized.

DHGY 219 Dental Public Health and Education
Term Prerequisite: DH 110, DH 150, DH 213
Semester Prerequisite: DADH 110, DHGY 120
Students will review scientific literature, dental epidemiology, principles of public health, and health-care delivery systems. Further study will include human behavior, teaching methodologies, interpersonal relations and communication skills related to patient education, motivation and acceptance of health care.
DHYG 220 Clinical Dental Hygiene III
Term Prerequisite: DH 210
Semester Prerequisite: DHYG 210-218
Clinical practice is continued with emphasis on performing comprehensive dental hygiene care, making decisions, solving problems, and managing time as dental hygienists do in private practice.

DHYG 222 Dental Specialties
Term Prerequisite: DHA 112, DH 220
Semester Prerequisite: DHYG 210, 215
Lectures and individualized instruction include 1) dental specialists, reviewing procedures and practices, and 2) the dental hygienist's role in recognizing specialty care needed while educating the patient regarding his/her need(s). Students observe specialty procedures in dental specialty offices.

DHYG 224 Testing Styles and Inventory, Ethics and Jurisprudence
Term Prerequisite: Admission to Program
Semester Prerequisite: DHYG 210
An introduction to testing techniques, test construction, and item analysis. Students inventory their knowledge of dental hygiene and through self-evaluation and planning, establish study skills while recognizing their personal study needs. Further, interviewing techniques, employment opportunities, insurance protection, continuing education, law, and professional ethics of dental hygiene and dentistry are discussed.

DHYG 229 Community Oral Health
Term Prerequisite: DH 213, 220, 223
Semester Prerequisite: DHYG 210, 219
Students implement a dental health education program utilizing assessment, planning, implementation, and evaluation processes. Each student will observe...

DHYG 230 Registered Dental Assistant Procedures for the Dental Hygienist
Term Prerequisite: DH 210, 211, 212
Semester Prerequisite: DHYG 210, 212, 215
A specially designed course for dental hygiene students wishing to learn ancillary hygiene procedures and those intraoral functions delegated only to the licensed Registered Dental Assistant in the State of Michigan. Instruction is emphasized in the laboratory setting to prepare the student for practical application of these procedures.

DNTS 001 Dentistry and Dental Health
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Introduction to the soft and hard tissues of the oral cavity, dental specialties, and oral health practices. Laboratory sessions assist the student in identifying dental anatomy structures and learning procedures effective in promoting good oral hygiene.

DNTS 002 General Dental Procedures
Term Prerequisite: DSC 001
Semester Prerequisite: DNTS 001
The study and laboratory practice of identifying basic dental instruments; sterilizing and disinfecting procedures; processing dental films and mounting radiographs; and mixing basic dental materials.

DNTS 010 Dental Business Assistant Office Methods
Term Prerequisite: DSC 001, Typing
Semester Prerequisite: DNTS 001, Typing
An introduction to dental office management as it relates to appointment control, recall systems, collections, telephone techniques, record keeping, inventory, and third-party payment plans (insurance). Each student completes 32 hours of on-site experience in a dental office.

DNTS 020 Dental Claims Assistant Office Methods
Term Prerequisite: DSC 001, Typing
Semester Prerequisite: DNTS 001, Typing
An introduction to dental office management as it relates to appointment control, recall systems, collections, telephone techniques, record keeping, inventory, and third-party payment plans (insurance).

DTDS 102 Drafting II
Term Prerequisite: DT 101
Semester Prerequisite: DTDS 101
This course covers advanced drafting and design techniques needed to project successive auxiliary views off of various orthogonal views. Layout and design concepts will also be stressed. Students will complete practical design projects in problem-solving and creativity applicable to the automotive, industrial, and aerospace industries.

DTDS 103 Geometric Tolerancing
Term Prerequisite: DT 101
Semester Prerequisite: DTDS 101 Concurrently
This course covers the principles and methods of dimensioning and tolerancing for specific design requirements on engineering drawings. Uniform practices for stating and interpreting these requirements will be stressed. Content includes use and understanding of the symbolic method of specification relating to tolerances being applied.

DTDS 104 Descriptive Geometry
Term Prerequisite: DT 102 Concurrently
Semester Prerequisite: DTDS 102 Concurrently
This course covers the solution of space problems through the practice of advanced orthographic projection. Content includes points, lines and planes, parallelism, perpendicularity, developments and intersections. Students will complete projects relating to architectural, civil and industrial engineering situations.

DTDS 110 Industrial Blueprint Reading
Term Prerequisite: DT 100
Semester Prerequisite: TECH 090
This course covers basic concepts in orthographic projection, with emphasis on interpretation of engineering drawings.

DTDS 131 AutoCAD Basic 2D
Term Prerequisite: DT 101
Semester Prerequisite: DTDS 101
Introduction to AutoCAD software. Creation of 2-D multiview mechanical drawings with dimensions and notes will be the main focus. Use of AutoCAD's layer, block, plot commands, and isometric views will also be covered in this course.

DTDS 132 AutoCAD Advanced
Term Prerequisite: CG 131
Semester Prerequisite: DTDS 131
This course builds on the material covered in DTDS 131. More complex drawings will be assigned; in addition to learning how to use attributes, create slide presentations, new line types, and write new menus and macros to customize AutoCAD to the user's needs.

DTDS 141 CADAM: Beginning
Term Prerequisite: DT 100, DT 101
Semester Prerequisite: TECH 090/Placement Test
This course is an introduction to the CADAM drafting software system. Students will learn to create multiview drawings with dimensions and notes. Emphasis will be placed on producing working/detailed drawings.

DTDS 142 CADAM: 2D Advanced Concepts
Term Prerequisite: DT 101, CG 201
Semester Prerequisite: DTDS 141, DTDS 101
In this course students will continue to gain proficiency with the CADAM system. The student will learn to create and assembly drawings of complex parts with oblique planes as used in automotive, industrial, and aerospace applications.

DTDS 150 Introduction to IBM CAD Basic Concepts
Term Prerequisite: DT 100/Equivalent
Semester Prerequisite: TECH 090/Equivalent
This course is an introduction to the basics of IBM CAD'S command structure and features. Included are creating 2-D and 3-D geometry, modifying geometry, images and raster conversion, calculator operation, macro creation, and data exchange.

DTDS 160 Automotive Body Design and Drafting I
Term Prerequisite: DT 103
Semester Prerequisite: DTDS 104 Concurrently
This course will expose students to drafting techniques and design procedures as they apply to automotive plastic and sheetmetal components. Emphasis will be placed on applications of descriptive geometry by exposing students to the opportunity to develop grids, work lines, and section views.

DTDS 161 Automotive Body Design and Drafting II
Term Prerequisite: DT 160
Semester Prerequisite: DTDS 160
This course will expose students to more automotive body drafting and design. Students will learn to create smooth lines, proportion curves, and develop the various types of surfaces used in automotive sheet metal and injection molded plastic designs.
DTDS 162 Automotive Body Design and Drafting III
Term Prerequisite: DT 161
Semester Prerequisite: DTDS 161
The basic theory of surfaces applied to all types of shapes will be covered in this course. The course will include practice and problems in applying theory of planes, cylindrical, conical, dragged, and doubled curved surfaces of all types, also including intersection of surfaces, and secondary surfaces.

DTDS 164 Chassis Design I
Term Prerequisite: DT 101
Semester Prerequisite: DTDS 103, DTDS 104
This is the first of a three-semester course sequence that covers the fundamental concepts of chassis design. Emphasis will be placed on terminology and design characteristics of chassis components. Students will complete detail drawings of various automotive chassis components.

DTDS 165 Chassis Design II
Term Prerequisite: Departmental Approval
Semester Prerequisite: DTDS 164
This is the second of a three-semester course sequence that covers intermediate concepts of chassis design. Emphasis will be placed on linkages, joints, and clearances. Kinematics will be introduced and used extensively. Students will perform chassis system clearance studies.

DTDS 166 Chassis Design III
Term Prerequisite: Departmental Approval
Semester Prerequisite: DTDS 165
This is the third of a three-semester course sequence that covers the advanced concepts of chassis design. Emphasis will be placed on linkages, joints, and clearances. Kinematics will be introduced and used extensively. Students will perform chassis system clearance studies.

DTDS 171 CADKEY: Industrial
Term Prerequisite: DT 100
Semester Prerequisite: TECH 090
A computer graphics course designed to teach the software package called CADKEY. The student will draw a mechanical drawing complete with dimensions and notes. Emphasis will be placed on creating and editing mechanical drawings.

DTDS 180 Unigraphics I
Term Prerequisite: DT 101 Concurrently/Equivalent Drafting Experience
Semester Prerequisite: DTDS 101 Concurrently/Equivalent Drafting Experience
This is the first of a three-semester course sequence that covers the fundamental concepts of the Unigraphics System of interactive design. This class covers basic concepts of 2-D and 3-D construction as well as the concepts of drafting and design.

DTDS 181 Unigraphics II
Semester Prerequisite: DTDS 180
This is the second course of a three-semester course sequence that covers the advanced concepts of the Unigraphics System of interactive design. This course covers design concepts in 3-D basic surface construction as well as the concepts of advanced surfaces.

DTDS 182 Unigraphics III
Term Prerequisite: Departmental Approval
Semester Prerequisite: DTDS 181
This is the third of a three-semester course sequence that covers modeling and organization concepts of the Unigraphics System of interactive design. This course covers solid modeling and assemblies and components.

DTDS 202 Die Design and Construction
Term Prerequisite: DT 101
Semester Prerequisite: DTDS 101
This course will emphasize the proper steps to designing a die. Also covered will be the names of various die components and understanding how they work.

DTDS 204 Jigs and Fixture Design
Semester Prerequisite: DTDS 101
Detailing techniques and dimensioning will be emphasized through the development of working drawings. These drawings will be extracted from a design concept or assembly type drawing. Familiarization with standard components will also be stressed.

DTDS 209 Industrial Drafting Lab
Term Prerequisite: Instructor Approval
Semester Prerequisite: DTDS 209
This lab time to industrial drafting students to fulfill extra requirements. This lab must be taken in conjunction with a drafting class.

DTDS 233 AutoCAD 3D and Solids
Term Prerequisite: CG 131
Semester Prerequisite: DTDS 131
Students will learn how to use the 3-D features of AutoCAD. Product design drawings will be used to develop skills. Students will learn how to construct a 3-D library of parts.

DTDS 234 AutoCAD Solids
Term Prerequisite: CG 133
Semester Prerequisite: DTDS 233
Students will learn how to use the solid modeling features of AutoCAD software. Creating industrial parts will be the main focus of the course. Students will develop a solids library of common parts.

DTDS 243 CADAM: 3-D
Term Prerequisite: DT 102, CG 242
Semester Prerequisite: DTDS 142
This course is designed to allow experienced CADAM students to apply three-dimensional concepts on the CADAM system. Students will work with wire frame construction and surfaces. Drawings will include actual part designs.

DTDS 244 CADAM: Solids
Term Prerequisite: CG 272
Semester Prerequisite: DTDS 243
This course will use CADAM's interactive solids design module to generate solid model assemblies. These models will be used to calculate mass properties, create photo-realistic images, and generate 2-D product assembly drawings.

DTDS 251 CGS: Line and Surface 1 - Data Management and Data Organization
Term Prerequisite: DT 100
Semester Prerequisite: DTDS 160
This course will introduce students to the line and surface application of General Motors Corporate Graphics system. Students will use the data management, data organization, and drawing view management operators to create a block structure, detail drawing with views, and both bulk and selective files.

DTDS 252 CGS: Line and Surface 2 - Inner Body Surface Development
Term Prerequisite: CG 245
Semester Prerequisite: DTDS 251
This course will expose students to operators within the line and surface application of General Motors Corporate Graphics System which are used to create wireframe and surface geometry. Emphasis will be placed on inner body "black metal" and injection molded plastic components.

DTDS 253 CGS: Line and Surface 3: Outer Body Surface Development
Term Prerequisite: CG 246
Semester Prerequisite: DTDS 262
This course will introduce students to operators within the line and surface application of General Motors Corporate Graphics System which are used to analyze and modify wireframe and surface geometry. Emphasis will be placed on the development of aesthetic automotive body panel surface geometry.

DTDS 280 Drafting Project Lab
Term Prerequisite: DT 103, 210/DT 106 Concurrently
Semester Prerequisite: DTDS 102, 103, 104
This course is intended to give the advanced drafting and design student an opportunity for more experience through mutual agreement between student and instructor. Students will complete advanced projects and research in a variety of design application situations.

DTDS 285 CADD Project Lab
Term Prerequisite: CG 271
Semester Prerequisite: Program Approval
This course is intended to give advanced drafting and design students an opportunity through mutual agreement between student and instructor, to complete project(s) on one of several available CADD systems.

DTDS 288 CADAM: Project NC
Term Prerequisite: CNC 202
Semester Prerequisite: DTDS 142, Instructor Approval
This course is intended for the student who wishes to work with an instructor on an actual project using CADAM numerical control software to produce a machined part.

ECNM 099 Seminar: Elder College Economics
Term Prerequisite: None
Semester Prerequisite: None
The course focuses upon selected aspects of the economic conditions in various locations in the world. Specific topics vary with each seminar.

ECNM 120 Economics of Society and Polity
Term Prerequisite: None
Semester Prerequisite: None
A comparative study of primitive social economies and modern political systems. An emphasis will be placed on the evolution of economic organization in human society.
ECNM 130 Honors: Economics of Society and Polity
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
A comparative study of primitive social economies and modern political systems. An emphasis will be placed on the evolution of economic organization in human society. This course is the same as ECNM 120 except that it is taught as a seminar for honors students only.

ECNM 101 Current Economic Issues
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to develop objective consideration of economic issues and provides an overview of economic analysis. Topic areas relate to an overall look at the economic system, government policy, prices and their application, money, income, and national income accounts of the United States.

ECNM 201 Principles of Economics - Micro
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to develop an objective consideration of economic issues and provides an overview of economic analysis. Topic areas relate to an overall look at the economic system, government policy, prices and their application, money, income, and national income accounts of the United States.

ECNM 202 Principles of Economics - Macro
Term Prerequisite: EC 201/Departmental Approval
Semester Prerequisite: Departmental Approval
This course addresses the theory of national income, employment and prices, and government fiscal and monetary policies designed to influence aggregate economic activity. It also includes the relationship of the domestic economy to international economic activity.

ECNM 211 Economic/Business History
Term Prerequisite: None
Semester Prerequisite: None
This course provides a survey of American economic and business history, change, and growth since the Civil War. Topics include an overview of business organization, the role of government and technological change, American industrial development, labor unions, and capitalization patterns.

ECNM 218 Money and Banking
Term Prerequisite: EC 202
Semester Prerequisite: Departmental Approval
This course covers the nature of money and the role of the federal reserve, commercial banks and other financial institutions in determining money supply. The course includes the role of money markets, capital markets, determination of interest rates, and the relationship between monetary policy and economic activity.

ECNM 221 International Economics
Term Prerequisite: EC 202/Instructor Approval
Semester Prerequisite: Departmental Approval
Examines the interrelationships between the U.S. Economy and the rest of the world. It covers balance of payments, exchange rate systems, effects of international economics on domestic, monetary and fiscal policies, gains from trade, restrictions on trade, and the development of international trade organizations.

ECNM 224 Intermediate Microeconomic Theory
Term Prerequisite: EC 201
Semester Prerequisite: Departmental Approval
This course covers consumers behavior theory production and cost relationships of individual firms, actions of firms in different market structures, the theory of resource firms, and general equilibrium theory. Discussion in each of these areas begins with a review of the principles covered in ECNM 201.

EDUC 120 Introduction to Education
Term Prerequisite: None
Semester Prerequisite: None
An introduction to teaching as a profession and education as a career. Included is an overview of the foundations, philosophy, history, and organization of education as a human endeavor. Current issues and trends in education are examined.

EDUC 201 Education Practicum
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Beginning practical experience and training in the field for individual students. The student is placed with an educational institution.

ELCT 101 Analog Problems
Term Prerequisite: High School Algebra
Semester Prerequisite: High School Algebra
This course provides an overview of analog circuit design problem practice for both DC and AC circuits. Topics include: analog circuit design, and the development of complex notations. A scientific calculator is required for polar to rectangular conversion and binary, octal, and decimal calculations.

ELCT 111 DC and AC Circuits
Term Prerequisite: ET 101
Semester Prerequisite: ELCT 101 Concurrently
A beginning circuit analysis course covering resistors, capacitors, inductors, transformers, and circuits. Lecture and laboratory topics include: resistor color code, series, parallel and series-parallel resistive circuits, R-C time constants, Kirchhoff network laws, superposition and Thevenin theorems, series and parallel RCL circuits, and series and parallel resonance.

ELCT 112 Transistors
Term Prerequisite: ET 112, ET 101/Approval
Semester Prerequisite: ELCT 111, ET 101/Approval
A lecture and laboratory course dealing with transistors and integrated circuits, bipolar and field effect transistor biasing, and single and multi-stage amplifier circuits. Circuits are designed and tested using analog and digital simulators.

ELCT 120 Programming Preparation
Term Prerequisite: None
Semester Prerequisite: None
The student will learn software that provides programming for high-level language programming software. The course includes a project in developing flowcharts for electronics-related problems that can be programmed on a computer.

ELCT 121 BASIC for Electronics
Term Prerequisite: CIM 250, ET 111/ET 160
Semester Prerequisite: ELCT 120, ELCT 111
The student will write and execute programs in the BASIC language for electronics circuit analysis. Program problems will range from simple single circuit to transistor amplifiers. A student-designed programming project is used as part of the lab evaluation.

ELCT 130 Machine Language Programming
Term Prerequisite: ET 102, ET 120
Semester Prerequisite: ELCT 111, ET 120
Covers the fundamentals of machine and assembly language programming for the MC68020/MPU, computer math, instruction set, addressing modes, branching, stack operations, subroutines, interrupts, and programming of PIA. Laboratory work includes writing programs in machine and assembly language and using a simulator to debug programs.

ELCT 131 Digital Basics
Term Prerequisite: ET 102, ET 112
Semester Prerequisite: ELCT 111, ET 120
Introduces digital electronics, including combinational logic, Boolean algebra, and functions of combinational logic such as multiplexers, demultiplexers, encoders, decoders, and code converters. It also includes sequential logic, flip-flops, timers, counters, and shift registers. Laboratory work includes the analysis, construction, and troubleshooting of digital circuits using TTL ICs.

ELCT 151 Computer Troubleshooting I
Term Prerequisite: ET 120
Semester Prerequisite: ELCT 171 Concurrently
This is a troubleshooting and repair course intended for students in the Computer Repair Certificate program. Course topics include basic troubleshooting techniques, using and board swap computer troubleshooting, disk drive maintenance and adjustment, and computer preventive maintenance.

ELCT 160 Logic Problems Analysis I
Term Prerequisite: None
Semester Prerequisite: None
A fundamental analysis course intended for students in the computer repair certificate program. Course topics include manipulation of formulas used in electronics, basic gate operation and truth tables, Boolean algebra, binary, octal and hexadecimal number systems.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term Prerequisite(s)</th>
<th>Semester Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELCT 161</td>
<td>Soldering/Desoldering</td>
<td>None</td>
<td></td>
<td>A basic soldering course. Course topics include soldering electronic components to printed circuit boards, cable construction, surface mount soldering. Desoldering components using solder wick, vacuum desoldering tools, and equipment and printed circuit board repair.</td>
</tr>
<tr>
<td>ELCT 170</td>
<td>Computer Repair Electronics I</td>
<td>ET 170</td>
<td>ELCT 170 Concurrently</td>
<td>A basic electronics course intended for students in the computer repair program. This course begins with basic electricity concepts and continues with topics through transistor circuits and basic digital electronics.</td>
</tr>
<tr>
<td>ELCT 171</td>
<td>Computer Repair Electronics II</td>
<td>ET 171</td>
<td>ELCT 170</td>
<td>A digital electronics and computer systems course intended for students in the Computer Repair Certificate program. Course topics include semiconductor and magnetic memories, memory, microprocessors, peripheral adapters, and microcomputer systems.</td>
</tr>
<tr>
<td>ELCT 190</td>
<td>Computer Test Equipment I</td>
<td>ET 171, ET 190</td>
<td>ELCT 170 Concurrently</td>
<td>A basic test equipment course intended for students in the Computer Repair Certificate program. This course introduces the student to the operation of electronic test equipment including VOM, DMM, oscilloscopes, storage oscilloscopes and basic digital test equipment.</td>
</tr>
<tr>
<td>ELCT 181</td>
<td>Computer Test Equipment II</td>
<td>ET 171</td>
<td>ELCT 170</td>
<td>An advanced test equipment course intended for students in the Computer Repair Certificate program. Course topics include software diagnostic routines, signature and data analysis, and computer troubleshooting equipment.</td>
</tr>
<tr>
<td>ELCT 200</td>
<td>CET Exam Preparation</td>
<td>ET 113</td>
<td>ELCT 112</td>
<td>This course is designed to prepare the student to take the Certified Electronic Technician, associate level, examination.</td>
</tr>
<tr>
<td>ELCT 206</td>
<td>Project Lab</td>
<td>ET 113, Approval</td>
<td>ELCT 112, Approval</td>
<td>A guided independent study of a topic of interest within the area of electronics. The student will write a research paper or construct an electronic device that has the prior approval of a faculty member.</td>
</tr>
<tr>
<td>ELCT 207</td>
<td>Project Lab</td>
<td>ET 113, Approval</td>
<td>ELCT 112, Approval</td>
<td>A guided independent study of a topic of interest within the area of electronics. The student will write a research paper or construct an electronic device that has the prior approval of a faculty member.</td>
</tr>
<tr>
<td>ELCT 208</td>
<td>Project Lab</td>
<td>ET 113, Approval</td>
<td>ELCT 112, Approval</td>
<td>A guided independent study of a topic of interest within the area of electronics. The student will write a research paper or construct an electronic device that has the prior approval of a faculty member.</td>
</tr>
<tr>
<td>ELCT 211</td>
<td>Linear Circuits I</td>
<td>ET 113</td>
<td>ELCT 112</td>
<td>Solid state devices such as the JFET, MOSFET, thyristors, and op-amps are studied. A unit on a printed circuit board design is included. The student will design a printed circuit layout and construct a bipolar power supply.</td>
</tr>
<tr>
<td>ELCT 212</td>
<td>Linear Circuits II</td>
<td>ET 211, ET 212</td>
<td>ELCT 211</td>
<td>This course covers applications of op-amps as used in active filters, waveform generators, and voltage regulators. Other linear devices studied include PLL, VCO, and three terminal regulators.</td>
</tr>
<tr>
<td>ELCT 230</td>
<td>Advanced Microprocessor</td>
<td>ET 231</td>
<td>ELCT 112, ELCT 121, ELCT 130, ELCT 131</td>
<td>Covers advanced topics in microprocessor: 8086MPU instruction set, addressing modes, PC interrupts assignments, BIOS, MSDOS functions, parallel and serial data transfer principles. Lab work involves writing programs and constructing hardware to configure and use 8255, 8279, 8254, 8251 interface adapters and A/D, D/A converters.</td>
</tr>
<tr>
<td>ELCT 231</td>
<td>Advanced Digital Electronics</td>
<td>ET 113, ET 121, ET 131</td>
<td>ELCT 112, ELCT 121, ELCT 130, ELCT 131</td>
<td>Course covers advanced topics in digital electronics: adders, comparators, code converters, ALUs, non-segmental and shift register counters, display systems, and solid-state memories. It also covers SPI, PISO, SIGNATURE, D/A and A/D circuits. Laboratory work includes the analysis, design, construction and troubleshooting of digital circuits using SSI, MSI and LSI ICs.</td>
</tr>
<tr>
<td>ELCT 232</td>
<td>Digital Project</td>
<td>ET 231</td>
<td>ELCT 230</td>
<td>This course deals with the design of a microcomputer-based programmable monitoring and control system designed around the MC68HC11 and the use of an emulator to verify the design. Laboratory work includes a microcomputer-based design project, preferably using the MC68HC11 with a keyboard, LED/LCD display, and sensors.</td>
</tr>
<tr>
<td>ELCT 241</td>
<td>Test Equipment Applications</td>
<td>ET 113</td>
<td>ELCT 112</td>
<td>The practical application of test equipment in troubleshooting and alignment is emphasized in this course. The student will learn the capabilities and limitations of meters, oscilloscopes, generators, spectrum analyzers, and distortion analyzers.</td>
</tr>
<tr>
<td>ELCT 242</td>
<td>Computer Interfacing and Peripherals</td>
<td>ET 231</td>
<td>ELCT 230</td>
<td>Covers 8086MPU pins functions, address decoding, interfacing of static memory, dynamic memory, and I/O adapters. Principles of operation of keyboard, display, printer, floppy disk, modem, LAN, and motor control hardware. Lab work involves constructing hardware and writing software for most of the peripherals discussed in the course.</td>
</tr>
<tr>
<td>ELCT 251</td>
<td>Digital Troubleshooting I</td>
<td>ET 131, ET 113</td>
<td>ELCT 112, ELCT 131</td>
<td>This is a half-semester lab course designed to give the student hands-on experience in troubleshooting digital circuits involving combinational logic, multiplexers, decoders, display and display drivers, flip-flops, counters, timing circuits, shift registers, and other digital circuitry. Class demonstrations and videotapes are used for instruction.</td>
</tr>
<tr>
<td>ELCT 252</td>
<td>Digital Troubleshooting II</td>
<td>ET 232, ET 251</td>
<td>ELCT 230, ELCT 231, ELCT 251</td>
<td>This course is a systematic approach to troubleshooting microprocessor based systems and using test equipment. The student gains hands-on experience by drawing timing diagrams, troubleshooting flowcharts, writing or using diagnostic programs, and using test equipment to locate faults on MPU, memory, video, I/O, and floppy disk controller boards.</td>
</tr>
<tr>
<td>ELCT 255</td>
<td>Consumer Product Systems</td>
<td>ET 212</td>
<td>ELCT 112</td>
<td>Common electronic consumer product operation is explained through block diagrams and schematic diagrams. Systems include AM and FM stereo radio, black-and-white and color television, audio and videotape recorders, and audio and videodisc players. Lab work will involve measurements and alignments of normally operating systems.</td>
</tr>
<tr>
<td>ELCT 271</td>
<td>Communications I</td>
<td>ET 113/Approval</td>
<td>ELCT 112/Approval</td>
<td>This course covers a review of resonant circuits, LC filter networks, radio frequency amplifiers, oscillators, amplitude modulation transmitting and receiving circuits and systems.</td>
</tr>
<tr>
<td>ELCT 272</td>
<td>Communications II</td>
<td>ET 271, ET 272</td>
<td>ELCT 271</td>
<td>The student will learn frequency modulation transmitting and receiving circuits and systems, transmission lines, antennas, and microwave devices.</td>
</tr>
<tr>
<td>ELCT 281</td>
<td>Biomedical Instrumentation</td>
<td>ET 212</td>
<td>ELCT 112</td>
<td>Preparation for the certified biomedical electronics technician examination begins here. The student will be introduced to biomedical safety standards and regulatory agencies as well as measurement of physiological signals with biomedical equipment. Lab exercises include safety testing and performance testing of biomedical equipment.</td>
</tr>
</tbody>
</table>
ELT 283  MET Exam Preparation
Term Prerequisite: Departmental Approval
Semester Prerequisite: ELCT 281
A review of material covered on the American Association of Medical Instrumentation (AAMI) certification exam. This includes safety, anatomy, physiology, electronics, and biomedical instrumentation.

ELCT 290  Biomedical Internship
Term Prerequisite: Program Approval
Semester Prerequisite: ELCT 281
This course will allow students to be placed in hospital biomedical repair shops and earn credit for satisfactory work performance. The students' occupational interests are considered along with their background or related courses to determine placement.

ELTE 100  Electrical Safety Practices
Term Prerequisite: None
Semester Prerequisite: None
This course covers basic electrical safety practices in the home, in the electrical laboratory, and in construction and industry. Included are state and federal standards and practices. This course is a prerequisite or co-requisite for all ELTE courses that have a lab.

ELTE 110  Practical Electricity
Term Prerequisite: EM 100
Semester Prerequisite: ELTE 100/Concurrently
This course introduces the student to electricity on a practical level. The student will learn to use meters to measure electrical quantities, do basic circuit calculations, install basic household electrical wiring, and investigate the behavior of motors and transformers. Reviews electrical codes and standards.

ELTE 112  Basic Wiring Installation
Term Prerequisite: EM 100, EM 104
Semester Prerequisite: ELTE 110
This course covers installation of a variety of wiring systems in wood frame and masonry construction. Students will practice installing non-metallic sheathed cable, flexible metal conduit, electrical metallic tubing, and rigid conduit.

ELTE 121  Analyzing Electric Circuits
Term Prerequisite: EM 104, MTH 012/Equivalent
Semester Prerequisite: TECH 100/Math Placement Test, ELTE 110/Concurrently
This course utilizes concepts in basic algebra, vector algebra, and trigonometry to solve DC and AC electric circuit problems. Topics will include the law, network analysis, series, parallel and combination DC and AC circuits, inductance, and capacitance.

ELTE 122  Industrial Control Electronics
Term Prerequisite: ET 112/EM 122
Semester Prerequisite: ELTE 110, ELTE 121
This course introduces the student to solid-state circuitry used in industry. Students will study diodes, transistors, SCRs, field-effect transistors, power circuits, etc. Laboratory will include oscilloscope usage. The course also includes an introduction to Boolean algebra and digital circuits.

ELTE 123  Motors and Transformers
Term Prerequisite: ET 112/EM 122
Semester Prerequisite: ELTE 121
This course begins with three-phase circuits, including three-phase power meters, and continues with practical application to single- and three-phase transformers, motors, and alternators. Brief coverage of DC machines.

ELTE 131  Introduction to Machine Control
Term Prerequisite: EM 100, EM 104
Semester Prerequisite: ELTE 110
A course in relay controls using industrial standards. The student will construct and understand the operation of three-phase motor control circuits, learn symbols and understand operation of machine control components including limit and proximity switches, pneumatic timers, latch relays, etc., and use wiring and ladder diagrams to connect and troubleshoot simple control circuits.

ELTE 141  National Electrical Code J
Term Prerequisite: EM 104/Equivalent
Semester Prerequisite: ELTE 110/Equivalent
An introductory course designed for individuals with little or no knowledge of the electrical code. Students will study the structure and scope of the National Electrical Code; learn how to locate and interpret code sections; Ohm's law, voltage drop, wire and conduit sizing, and installation methods.

ELTE 142  National Electrical Code II
Term Prerequisite: BT 251/EM 135/Departmental Approval
Semester Prerequisite: ELTE 141/ELTE 145/Approval
This course is for individuals with field experience and basic electrical training who need a review for the State Journey examination. Students will review the Code with focus on locating and interpreting code sections. In addition to the N.E.C., State of Michigan electrical rules will be reviewed.

ELTE 143  National Electrical Code III
Term Prerequisite: BT 252/Departmental Approval
Semester Prerequisite: ELTE 142/Departmental Approval
For individuals with a journey electrician's license who need to review for the State Master's exam. Students will cover the Code using the index method, discuss interpretation of the Code, study State of Michigan electrical and construction code rules, and discuss topics appropriate to the Electrical Contractors exam.

ELTE 145  Electrical Prints for Buildings
Term Prerequisite: EM 104/EM 121
Semester Prerequisite: ELTE 110
Cover construction prints emphasizing standard and non-standard symbols and interpretation of prints. Uses the National Electrical Code to calculate branch circuit, feeder, motor circuit, and service sizes. Other topics include grounding, high voltage systems, uninterruptible power supplies, signaling, and safety systems.

ELTE 150  Electric Motor Maintenance
Term Prerequisite: EM 104
Semester Prerequisite: ELTE 110
Students learn to diagnose and test electric motors. Students will learn to identify and repair common problems in motors using meters, test equipment, and appropriate tools. An introduction to rewinding and metal working procedures is also included.

ELTE 232  Industrial Control Design
Term Prerequisite: EM 131
Semester Prerequisite: ELTE 131
This course is a continuation of ELTE 131, covering more components and larger more complex machine control diagrams, including automation interlocking and automatic continuous cycling of machinery. Students will be taught to design the control circuits for more complex machines in conformance with industry standards.

ELTE 240  Electrical Estimating
Term Prerequisite: EM 102, EM 135
Semester Prerequisite: ELTE 112, ELTE 145
Basics of preparing accurate, competitive electrical estimates for the building trade. Topics include take-off procedure using electrical, mechanical and architectural prints, lighting design, labor and materials cost, evaluation techniques and specifications. Students should have wiring experience, practice in the use of NEC rules, and electrical prints before enrollment.

ELTE 260  Introduction to Programmable Logic Controllers
Term Prerequisite: EM 131
Semester Prerequisite: ELTE 131
This course covers programmable logic controllers with focus on common operating principles. Topics include: the capabilities, similarities and differences among controllers, programming (examine on/off, timers, counters), and connecting external devices to Allen Bradley, Modicon and Texas Instruments programmable controllers. Prepares students for any of the advanced PLC courses (ELTE 281, 282, 283).

ELTE 261  Allen-Bradley PLC-5 Advanced
Term Prerequisite: PLC-5 Seminar/EM 161
Semester Prerequisite: ELTE 260
This course covers programming and connections for Allen-Bradley PLC-5 controllers. Focus on math, subroutine, file, block transfer, sequencers, logic and bit manipulation, instruction set. Students will learn logic for machine control, programming and utilizing intelligent cards, ASCII, analog input/output, and system documentation. Stage programming concepts and methods will be addressed.

ELTE 262  Modicon 984 Advanced
Term Prerequisite: EM 161
Semester Prerequisite: ELTE 260
This course covers programming and connections for Modicon 984 programmable controllers. Focus on math, skip, subroutine, bit manipulation, data transfer, move, and logic instructions. Students will learn logic for machine control, programming and utilizing intelligent cards, ASCII, analog input/output, and system documentation. Stage programming concepts and methods will be addressed.

ELTE 263  Texas Instruments 405 Advanced
Term Prerequisite: Instructor Approval
Semester Prerequisite: ELTE 260
Covers programming and connections for Texas Instruments 405 programmable controllers. Focus on math, Boolean, subroutine, BCD, bit manipulation, data table and logic instructions. Students will learn logic for machine control, programming and utilizing intelligent cards, ASCII, analog input/output, and system documentation. Stage programming concepts and methods will be addressed.

EMSA 100  First Aid and CPR 2
Term Prerequisite: None
Semester Prerequisite: None
Designed to provide the knowledge and skills necessary to respond to and treat emergency situations until professional medical help is obtained. First Aid and CPR certificates issued upon successful completion.

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ENMS 110 EMT Refresher
Term Prerequisite: Basic EMT
Semester Prerequisite: Basic EMT
This course will provide the EMT the opportunity to meet State of Michigan refresher requirements. Content includes CPR, oxygen therapy, airway management, patient assessment, medical and environmental emergencies, backboarding, bandaging, shock management, emergency childbirth, and pediatrics. Successful completion of this course requires passing written and practical exams.

ENSA 221 CISD-Critical Incident Stress Debriefing
Term Prerequisite: EMS/Fire/Police/Clergy/Counselors
Semester Prerequisite: EMS/Fire/Police/Clergy/Counselors
This seminar provides the knowledge and skills required to function as a member of a CISD team which assist peers with preventing, recognizing, mitigating, and recovering from stressful emergencies. It is required for emergency related personnel, mental health workers, and clergy interested in becoming a team member.

ENSA 222 EMS Instructor Coordinator
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
A Michigan Department of Public Health approved course for EMS personnel interested in becoming an Instructor Coordinator. Includes teaching and testing methods, lesson plan development, writing performance objectives, course administration, MDPH application for course approval, and meeting state requirements. Student teaching required.

ENSA 223 Pre-Hospital Care of the Injured Child
Term Prerequisite: EMS Personnel
Semester Prerequisite: EMS Personnel
A course based on the educational program developed by the Children’s Hospital National Medical Center, Washington, D.C. The course focuses on the pre-hospital management of the acutely ill or injured child or infant. Proper pre-course preparation is essential to successful completion.

ENSA 224 BTL5-Basic Trauma Life Support
Term Prerequisite: EMS Personnel
Semester Prerequisite: EMS Personnel
A course which provides instruction and intense evaluation of current theory and skills used in the pre-hospital management of the trauma victim. Proper preparation is required to successfully complete the course. Follows national BTL5 curriculum.

ENSA 225 Paramedic Continuing Education
Term Prerequisite: EMS Personnel
Semester Prerequisite: EMS Personnel
This course is a series of continuing education topics designed to meet all of the CE points required by the State of Michigan for relicensure of a paramedic. Basic EMTs and EMT Specialist may attend designated sessions.

ENSB 101 CPR/Heartsaver
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed for CPR instruction of the general public and adheres to American Heart Association guidelines. Content includes adult one-person CPR and foreign body airway obstruction. Also includes information about heart disease, risk factors, prudent heart living, and heart and lungs physiology.

ENSB 102 CPR for Health Care Professional
Term Prerequisite: Health Professional
Semester Prerequisite: Health Professional
This seminar is designed for CPR instruction of health-care providers and adheres to American Heart Association guidelines. Content includes one- and two-rescuer CPR, child and pediatric CPR, adult, child, pediatric foreign body airway obstruction, information about heart disease, risk factors, and physiology of the heart and lungs.

ENSB 103 CPR Recertification
Term Prerequisite: Current Provider “C” Card
Semester Prerequisite: Current Provider “C” Card
This seminar is designed for CPR instruction for individuals who have previously obtained instruction in the basics of cardiopulmonary resuscitation and foreign body airway obstruction. The participants must have a current provider card for CPR. The curriculum and testing consists of recertification techniques for CPR.

ENSB 104 CPR Instructor
Term Prerequisite: Basic Cardiac Life Support, Admission to Program
Semester Prerequisite: Basic Cardiac Life Support, Admission to Program
The CPR Instructor’s Seminar is to provide the opportunity and forum to acquire knowledge and skills to accurately instruct and test the Basic Life Support Provider’s courses according to American Heart Association guidelines.

ENSB 106 CPR/Special Situations
Term Prerequisite: None
Semester Prerequisite: None
This seminar provides instruction of CPR for special situations or groups. Infant and child CPR and foreign body airway obstruction for babysitters and parents would fall under this curriculum.

ENSB 110 Red Cross First Aid and CPR
Term Prerequisite: None
Semester Prerequisite: None
This seminar offers adult CPR including airway obstruction and four hours of Basic First Aid. Red Cross certification is given to those successfully completing both components.

ENSB 111 First Aid When Seconds Count
Term Prerequisite: None
Semester Prerequisite: None
A seminar designed to instruct and prepare individuals to administer immediate first aid when sudden illness or injury occurs until professional help arrives. This seminar provides the necessary information needed to save lives and prevent further injury within the first few minutes.

ENSB 121 EMS Continuing Education A
Term Prerequisite: EMS Personnel
Semester Prerequisite: EMS Personnel
A series of continuing education seminars for the basic EMT, EMT Specialist or paramedic designed to meet three or four continuing education credits for relicensure requirements of the State of Michigan. Students may elect to take as many seminars as needed to fulfill their relicensure requirements.

ENSB 122 EMS Continuing Education B
Term Prerequisite: EMS Personnel
Semester Prerequisite: EMS Personnel
A series of continuing education seminars for the basic EMT, EMT Specialist or paramedic designed to meet five or six continuing education credits for relicensure requirements of the State of Michigan. Students may elect to take as many seminars as needed to fulfill their relicensure requirements.

ENSB 123 EMS Continuing Education C
Term Prerequisite: EMS Personnel
Semester Prerequisite: EMS Personnel
A series of continuing education seminars for the basic EMT, EMT Specialist or paramedic designed to meet five or six continuing education credits for relicensure requirements of the State of Michigan. Students may elect to take as many seminars as needed to fulfill their relicensure requirements.

ENMA 100 Medical First Responder
Term Prerequisite: None
Semester Prerequisite: None
A course to provide the student with the knowledge and skills necessary to manage ill or injured victims at the scene of an emergency until the arrival of ambulance personnel. Successful completion enables the student to apply for state licensure as a Medical First Responder.

ENMA 101 Basic EMT I
Term Prerequisite: None
Semester Prerequisite: None
First in a sequence of four courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including airway management, patient assessment, CPR soft tissue injuries, head, chest, and abdominal injuries, and proper use of equipment in the delivery of basic emergency care.

ENMA 102 Basic EMT II
Term Prerequisite: Enrolled in EMT 141
Semester Prerequisite: Enrolled in EMTA 101
Second in a sequence of four courses to prepare the student as a basic EMT. Emphasis is placed on practical skills including patient assessment, bandaging, splinting, backboarding, oxygen delivery equipment, CPR, and airway management in the delivery of basic emergency care.

ENMA 103 Basic EMT III
Term Prerequisite: EMT 141, EMT 142
Semester Prerequisite: EMTA 101, EMTA 102
The third in a sequence of four courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including the recognition and management of environmental and medical emergencies; verbal, written and radio communications, triage, emergency childbirth, and pediatric emergencies.

ENMA 104 Basic EMT IV
Term Prerequisite: Enrolled in EMT 143
Semester Prerequisite: Enrolled in EMTA 103
The final course in a sequence of four to prepare the student as a basic EMT. Emphasis is placed on the overall delivery of basic emergency care through simulated emergencies. Successful completion of the course and the clinical component enables the student to apply for licensing as a basic EMT. 

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EMTA 105 Ambulance Driving 2
Term Prerequisite: EMT/EMT Student
Semester Prerequisite: EMT/EMT Student
A course to provide the EMT with the knowledge and practical experience in the operation of an ambulance. The course will focus on safety, defensive driving techniques, and specialized driving maneuvers.

EMTA 106 EMS Communications 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
A course to provide the EMT with knowledge and skill in written and verbal communication, the operation of dispatching, and ambulance-to-hospital radio operation specific to prehospital emergency care.

EMTA 107 Psychiatric Emergencies 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
A course to provide the EMT with skill in the management and approach to psychological emergencies and crisis situations in the prehospital setting. Emphasis is placed on psychological theory and communications techniques.

EMTA 108 Legal Issues in Emergency Medical Services 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
A course to assist the EMT in understanding the legal system and legal principles as they apply to emergency prehospital care. Emphasis is placed on the evaluation of legally sound report writing skills, deposition delivery and legal testimony.

EMTA 109 EMS Dangerous Situations 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
A course to provide the EMT with enhanced awareness of specialized and dangerous situations faced in the prehospital setting. Emphasis is placed on confrontations, self protection, patient and scene management.

EMTA 110 Basic EMT Pharmacology 2
Term Prerequisite: EMT/Admission to Program
Semester Prerequisite: EMT/Admission to Program
This course is designed to familiarize the student with common medications encountered in the field. Special attention will be placed on emergency drugs used in emergency situations and medications frequently used by emergency personnel.

EMTA 111 EMT Physical Assessment 2
Term Prerequisite: EMT/Admission to Program
Semester Prerequisite: EMT/Admission to Program
This course is designed to give the EMT and EMT-S skills to go beyond basic patient assessment. Emphasis is placed on history taking and interpretation of vital signs. Includes analysis by body system and interpretation of physical findings. Useful for field or hospital practice.

EMTA 112 Basic EMT Clinical 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This is the clinical/simulation component in the three term basic EMT program. Student will be assigned to hospital clinical sites with an instructor, in simulation on campus and EMS agencies with a licensed EMT or paramedic.

EMTA 113 EMT Field Practicum 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course offers the EMT student an opportunity to obtain field experience by doing an "Internship" at a cooperating agency that provides pre-hospital emergency care. The agency will evaluate the student on attendance, punctuality, appearance, patient care and communication.

EMTA 114 Rescue and Extrication 2
Term Prerequisite: EMT/Rescue Personnel
Semester Prerequisite: EMT/Rescue Personnel
A course to provide EMT students with skills in light and heavy vehicle extrication, water rescue techniques, extraction from farm machinery, and other specialized rescue techniques. Emphasis is placed on patient and rescuer safety.

EMTA 200 EMT Specialist 5
Term Prerequisite: Basic EMT
Semester Prerequisite: Basic EMT
A course to provide the basic EMT with knowledge and skills necessary for licensure as an EMT Specialist. Emphasis is placed on IV therapy, advanced airway skills, and patient assessment skills. Successful completion requires passing written and practical exams and the supervised clinical component.
ENGL 260 African American Literature
Term Prerequisite: WRIT 121 (ENG 122 Recommended)
Semester Prerequisite: WRIT 121 (ENG 122 Recommended)
This course is an introduction to the African American literary tradition, which explores how black men and women have portrayed American life and their experiences in autobiography, essay, fiction, poetry, and drama. Students will read and discuss slave narratives, literature from the Harlem Renaissance, and several modern texts.

ENGL 265 Japanese Literature
Term Prerequisite: WRIT 121 (ENG 122 Recommended)
Semester Prerequisite: WRIT 121 (ENG 122 Recommended)
Arranged chronologically, this course draws heavily on many different genres of Japanese literature. The basis for selection of works to be read rests on the insight that each work gives to the Japanese society which produced it, and upon its universal characteristics.

ENGL 256 British Literature I
Term Prerequisite: WRIT 121 (ENG 122 Recommended)
Semester Prerequisite: WRIT 121 (ENG 122 Recommended)
British Literature I surveys the poetry, prose, and drama of the major British writers from Chaucer (14th Century) to Milton (17th Century). The works are selected to reflect the attitude and values of British culture and the perception of the world from a British point of view.

ENGL 270 Literature by Women
Term Prerequisite: WRIT 121 (ENG 122 Recommended)
Semester Prerequisite: WRIT 121 (ENG 122 Recommended)
A study of selected works by English and North American women writers. Designed to increase understanding of the themes, images, issues, and modes of expression of women writers.

ENGL 290 Shakespeare
Term Prerequisite: WRIT 121 (ENG 122 Recommended)
Semester Prerequisite: WRIT 121 (ENG 122 Recommended)
Introductory course in the dramatic works of William Shakespeare. Students will read nine to twelve plays representative of the author's comedies, histories, and tragedies.

ENGL 295 Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department.

ENGL 296 Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to Honors students who have grade-point averages of at least 3.0 in courses offered by this department.

ENRI 005 Academic Preparation Laboratory
Term Prerequisite: None
Semester Prerequisite: None
Arranges the days and times when students will attend enrichment lab. Students must register for both an enrichment lab course, such as ENRI 109, and a section of ENRI 005.

ENRI 098 Success Seminar
Term Prerequisite: None
Semester Prerequisite: None
Mini-workshop intended to introduce and/or review reading-related techniques for academic success. Sessions cover time management, establishing goals, learning strategies, and test-taking strategies.

ENRI 101 Individualized English I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing; editing; vocabulary development, including pronunciation; and reading. Editing instruction may include spelling, standard English grammar, organizational structure, and punctuation. Students and instructors select instructional materials and design an individualized study program. (May repeat for credit three times.)

ENRI 102 Individualized English II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing; editing; vocabulary development, including pronunciation; and reading. Editing instruction may include spelling, standard English grammar, organizational structure, and punctuation. Students and instructors select instructional materials and design an individualized study program. (May repeat for credit three times.)

ENRI 103 Individualized English III
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individualized instruction in one or several language areas: writing; editing; vocabulary development, including pronunciation; and reading. Editing instruction may include spelling, standard English grammar, organizational structure, and punctuation. Students and instructors select instructional materials and design an individualized study program. (May repeat for credit three times.)

ENRI 109 Academic Preparation I
Term Prerequisite: RDG/WRT Placement Test
Semester Prerequisite: RDG/WRT Placement Test
Offers a unified and collaborative approach to learning basic language skills. Emphasizes reading, writing, speaking, listening, and thinking skills. Students assist one another in exploring topics of their choice from various academic disciplines. First of two academic preparation courses. Requires enrollment in ENRI 005.

ENRI 110 Academic Preparation II: College Assignments
Term Prerequisite: ENRI 101/RDG/WRT Placement Test
Semester Prerequisite: ENRI 106/RDG/WRT Placement Test
Designed to introduce students to college assignments and resources in various academic disciplines. Promotes awareness of learning skills and strategies. Encourages the positive attitude and self-directed learning behavior characteristics of successful college students. Includes reading, writing, speaking, and listening activities in a workshop environment. Requires enrollment in ENRI 005.

ENRI 152 Orientation Workshop: College Reading Survival Skills
Term Prerequisite: None
Semester Prerequisite: None
Designed for beginning college students, whether recent high school graduates or returning adults. Develops college reading survival skills. Concentrates on reading speed and flexibility, study techniques, concentration and memory, note-taking, test-taking, and vocabulary expansion.

ENRI 162 Orientation Workshop: College Writing Skills
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for new and returning students, as well as others from the community. It helps students develop their writing skills, including the study of writing for various disciplines, the writing process, and the basics of grammar, sentence style, and punctuation.

ESLA 106 English as a Second Language: Beginning
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
For advanced beginning ESL students who have been introduced to some basic English structures but have not yet mastered them. Class sessions focus on the spoken form and homework on the written form.

ESLA 108 English as a Second Language: Intermediate
Term Prerequisite: ESL 116/Placement Test
Semester Prerequisite: ESL 106/Placement Test
For intermediate ESL students. Reinforces the instruction of ESL 106 and introduces more advanced grammatical structures. Increased attention to reading and to writing.

ESLA 110 English as a Second Language: Advanced
Term Prerequisite: ESL 118/Placement Test
Semester Prerequisite: ESL 106/Placement Test
For advanced ESL students. Reinforces instruction of ESL 106 and 108 and emphasizes writing, reading, and oral communication for college-level work. Students write and revise essays, participate in a variety of speaking and listening activities, and practice college reading skills.

ESLT 011 Grammar/Writing I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is one in a series for the Limited English Proficient Students. Students are introduced to the basics of English grammar and writing, and practice simple sentences, commands, and requests related to vocational and technical training. Students practice filling out forms and writing short reports.
ESLT 012 Grammar/Writing II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide the Limited English Proficient student with practice in the basics of English grammar and a variety of writing assignments. Students will practice a wide range of grammatical forms. Writing assignments will focus on everyday and vocational/technical work-related skills.

ESLT 013 Grammar/Writing III
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide the Limited English Proficient student with a review of basic English grammar and practice with complex grammatical structures. Students will apply their knowledge of English grammar in a variety of written assignments on work-related topics and vocational course work.

ESLT 014 Grammar/Writing IV
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide Limited English Proficient students with the opportunity to practice the writing and revising of technical reports. Assignments will include descriptions, summary of cause and effect relationships, comparison and contrast, instructions, and classification. Students will identify their grammatical problems and develop a study plan for correcting them.

ESLT 021 Speaking/Listening I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to teach American English pronunciation and conversational patterns to students with limited English proficiency. Materials relate to everyday life, technical related work, and vocational courses. Students will practice interviewing and listening comprehension skills.

ESLT 022 Speaking/Listening II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide intensive practice in pronunciation and conversational English, as used in everyday life, the technical work place, and vocational courses. Lessons are designed to reinforce English grammatical structures, increase students’ intelligibility and listening comprehension, and develop fluency in spoken English.

ESLT 023 Speaking/Listening III
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to give Limited English Proficient students intensive practice in conversation skills and listening comprehension. Students will review American English pronunciation, stress, and intonation patterns, and practice a variety of oral communication skills, including interviewing, rehearsed oral presentations, and extemporaneous speech. Topics are vocationally related.

ESLT 024 Speaking/Listening IV
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide advanced Limited English Proficient students with practice in spontaneous and formal conversation skills. Students will practice listening skills, interviewing, problem-solving, and oral presentations. Topics will be vocationally related.

ESLT 031 Reading I
Term Prerequisite: Limited English Proficiency
Semester Prerequisite: Limited English Proficiency
This course is designed to teach basic reading skills to students with limited English proficiency. Classroom exercises focus on vocational readings, vocabulary development, and the ability to discuss and report on the assigned readings. Readings concern everyday life and technical work related jobs.

ESLT 032 Reading II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to help Limited English Proficient students develop their general reading skills and increase their vocabulary level. Students will learn to identify main ideas, understand English idioms, and increase their reading speed while maintaining comprehension. Materials relate to vocational courses, everyday life and technical topics.

ESLT 033 Reading III
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to give Limited English Proficient students practice in reading scientific and technical texts. Assignments will focus on the development of technical vocabulary, identification of main ideas and important details, and summarizing information from textbooks.

FIRE 101 Basic Fire Training Level I A and B
Term Prerequisite: Departmental Approval
Semester Prerequisite: See Program Coordinator
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, and life safety.

FIRE 102 Basic Fire Training Level II C and D
Term Prerequisite: FIRE 101
Semester Prerequisite: See Program Coordinator
Level II is basic training required for all career fire fighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes advanced fire suppression, apparatus operation, and life safety.

FIRE 110 Fire Prevention and Law
Term Prerequisite: None
Semester Prerequisite: None
This course identifies applicable statutes of Michigan Law as they relate to the Fire Service. Covers selected portions of NFPA 101, the Life Safety Code, and appropriate portions of BOCA, and other building codes. Focuses on the importance of an aggressive fire prevention plan in communities.

FIRE 115 Building Construction for the Fire Service
Term Prerequisite: None
Semester Prerequisite: None
This course involves the essentials of building design and construction for the fire service with emphasis on life safety, evacuation, fire extension, and collapse.

FIRE 120 Chemistry of Hazardous Materials
Term Prerequisite: None
Semester Prerequisite: None
A college level chemistry course focusing on hazardous materials encountered by firefighters. Contains specific elements of NFPA 741, 742 and OSHA CFR 1041.120. Topics include atomic and molecular theory, bonding property of elements, oxidation and reduction reactions, kinetic-molecular theory, solutions and electrochemistry. Includes Michigan Haz-Mat First Responder Certification.

FIRE 125 Fire Protection Systems and Equipment
Term Prerequisite: None
Semester Prerequisite: None
Identifies fixed systems typically encountered by firefighters responding to industrial complexes or specialized environments. Emphasizes selected portions of detection and alarm (NFPA 72-85) sprinklers and standpipes (NFPA 13 and 1964), and special systems and design.

FIRE 130 Hydraulics and Pump Operations
Term Prerequisite: ATM 151
Semester Prerequisite: TECH 100
Describes the fundamentals of hydraulics, including water supply problems, standards and pump requirements, and practical application of knowledge to fire-fighting problems. Includes selected portions of NFPA 1901 and 1002.

FIRE 150 Fire Command and Operations
Term Prerequisite: None
Semester Prerequisite: None
This course centers on the initial fireground attack from a company officer’s perspective. Deals separately with Engine and Truck Company Operations including initial assignments, use of resources, rescue, streams, and salvage. Covers selected portions of NFPA 1002, 1410, 1904 and 1961. Covers the National Fire Academy Incident Command System.

FIRE 210 Fire Investigation
Term Prerequisite: Fireman/Sworn Police Officer
Semester Prerequisite: FIRE 101/Sworn Police Officer
This course investigates fire behavior, fire investigation and determining cause and origin, accidental, incendiarly or arson type fires. Describes methods of recognizing and identifying fire cause and arson investigation. Covers the use of NFPA materials and OSHA requirements.

FIRE 220 Hazardous Materials in the Fire Service
Term Prerequisite: TEC 202
Semester Prerequisite: FIRE 120
Explores the concepts and methods of detection, control, and mitigation of hazardous materials incidents. Contains specific elements of NFPA 741, 742, and OSHA CFR 1041.120. Includes Michigan Haz-Mat Operations Level Certification.

FIRE 250 Fire Administration
Term Prerequisite: Departmental Approval
Semester Prerequisite: Fire Command
This course provides the student with a better understanding of motivation and the proper reaction from management. Covers labor relations and collective bargaining, fiscal management, and political interaction. Presents modern approaches to the challenges which face today’s fire executives.
FREN 101 Elementary French I
Term Prerequisite: None
Semester Prerequisite: None
Introductory course open to students with little or no knowledge of French. Students are introduced to basic patterns and structures of French, enabling them to develop listening, speaking, reading, and writing skills. Emphasis is placed on contemporary vocabulary, essentials of grammar and pronunciation.

FREN 102 Elementary French II
Term Prerequisite: FRN 102/Equivalent or Minimum in FRN 101
Semester Prerequisite: FREN 101/Equivalent
Second course of a two-semester sequence. Introduction to more complex structures and patterns, and more active use of spoken and written French.

FREN 115 Seminar: Conversational French I
Term Prerequisite: None
Semester Prerequisite: None
Students learn how to communicate orally in everyday life situations and in travel abroad. Emphasis is on the development of ability to communicate in French. French culture is explored.

FREN 116 Seminar: Conversational French II
Term Prerequisite: FREN 115/Equivalent
Semester Prerequisite: FREN 115/Equivalent
Continuation of FREN 115. Designed for advanced beginners who wish to improve their speaking ability in the context of daily living. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation through class discussions in French.

FREN 201 Intermediate French I
Term Prerequisite: FREN 103/Equivalent or Minimum in FRN 102
Semester Prerequisite: FREN 102/Equivalent
This course provides grammar review, vocabulary building, group discussions, composition writing, and lectures on cultural and literary topics. Homework involves reading and writing assignments, as well as oral presentations.

FREN 202 Intermediate French II
Term Prerequisite: FREN 200/Equivalent or Minimum in FRN 201
Semester Prerequisite: FREN 201/Equivalent
Continued review of more complex grammar topics. Reading of cultural and literary texts for a better understanding of the francophone world. Students will improve fluency through writing and discussions in the target language.

GEOG 099 Seminar: Elder College Geography
Term Prerequisite: None
Semester Prerequisite: None
The course focuses upon selected aspects of the geography and current events of various locations in the world. Specific topics vary with each seminar.

GEOG 120 Introduction to Geography
Term Prerequisite: None
Semester Prerequisite: None
An introductory course designed to provide contemporary geographic ideas and techniques to study the interaction between people and their physical environment.

GEOG 121 Physical Geography
Term Prerequisite: None
Semester Prerequisite: None
This course describes and analyzes human relationships with the natural and cultural environment and examines the physical and cultural aspects of the major regions of the world. International interdependency is examined to promote global awareness.

GEOG 202 Geography of North America
Term Prerequisite: None
Semester Prerequisite: None
A study of the human and physical resources of North America. This course will identify some of the factors that influence quality of life and give character to each of the various subregions.

GEOG 203 Economic Geography
Term Prerequisite: None
Semester Prerequisite: None
The study of the distribution of economic activities throughout the world. Emphasizes agriculture, resources, population, industry, urbanization, and trade.

GEOG 296 One Credit Independent Study in Geography
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project chosen by the student must be approved in advance by the Department Chair and be supervised by a faculty member. It must also meet specific academic goals.

GEOG 296 Two Credit Independent Study in Geography
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project chosen by the student must be approved in advance by the Department Chair and be supervised by a faculty member. It must also meet specific academic goals.

GEOG 297 Three Credit Independent Study in Geography
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project chosen by the student must be approved in advance by the Department Chair and be supervised by a faculty member. It must also meet specific academic goals.

GEOL 110 Seminar: Geology of Western National Parks
Term Prerequisite: Departmental Approval
Semester Prerequisite: Geology Inventory Passed
This seminar course is a survey of the geological features, surface processes and history of the western national parks and monuments. The geology of these sites is presented within the context of geologically defined regions and their sequence of origin. Emphasis is placed on video and slide presentations accompanying lecture.

GEOL 112 Seminar: Dinosaurs
Term Prerequisite: Departmental Approval
Semester Prerequisite: Science Inventory Passed
This seminar course presents timely inquiries into all aspects of dinosaurs, their discoveries and discoveries, and the Mesozoic world. Emphasis is given to theoretical controversies concerning their ecology, origin and evolution, physiology, behavior, and extinction.

GEOL 114 Seminar: Global Warming and Ice Ages
Term Prerequisite: Departmental Approval
Semester Prerequisite: Science Inventory Passed
Timely investigations of causes and consequences of global warming, theories of ice ages, past climates and the geological evidence thereof, and coevolution of physical and biological spheres. Laboratory includes standard geological and computer-based reconstructions of past climates and physical consequences of global warming. Glacial geology field trip.

GEOL 116 Seminar: The Meaning of Evolution
Term Prerequisite: Departmental Approval
Semester Prerequisite: Science Inventory Passed
An inquiry into evolutionary theory and its development, philosophy of science, and evolutionary mechanisms in discussion format. The theory's importance to human, animal and environmental ethics is included. Laboratory includes exercises, essays on conceptual topics, a formal class debate, and a required field trip.

GEOL 200 Michigan Geology
Term Prerequisite: Departmental Approval
Semester Prerequisite: Science Inventory Passed
Evidence from the rock and fossil record is used to reconstruct the sequence of events and changing environmental conditions of Michigan's past. Michigan's geologic resources (e.g., petroleum, natural gas, coal, iron, copper, salt, gypsum, surface groundwater, sand/gravel) and environmental issues (e.g., waste disposal, water pollution) are investigated.

GEOL 210 Geology Field Studies
Term Prerequisite: Departmental Approval
Semester Prerequisite: Geology Inventory Passed
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gyspum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.)

GEOL 212 Geology Field Studies
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gyspum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.).
GEOL 214 Geology Field Studies
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gypsum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.)

GEOL 216 Michigan Field Geology
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Field investigations explore the geologic agents and human-related activities that have shaped the surface of the central southern peninsula of Michigan. Examples: glacial landforms, stream valleys, shorelines, dunes, quarries, roadcuts. Each class period will consist of a visit to an area of geologic interest.

GEOL 221 Earth Materials and Processes: Physical Geology
Term Prerequisite: Science Inventory Passed, MTH 012
Semester Prerequisite: Science Inventory Passed, MATH 062
Investigates the dynamic physical earth using a cause-effect theme. Emphasizes relationships of geologic cycles (tectonic/hydrologic) to modifications of earth’s crust (e.g., volcanism, mountain building, rivers, glaciers) with introduction to environmental topics and earth resources. Laboratory includes mineral and rock identification, topographic and geologic map interpretation, plate tectonics exercises.

GEOL 222 Earth and Life Through Time: Historical Geology
Term Prerequisite: Science Inventory Passed, MTH 012
Semester Prerequisite: Science Inventory Passed, MATH 062
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 and evolution of ecosystems, geologic maps, and plate tectonics’ influence on the environment.

GEOL 230 Environmental Geology
Term Prerequisite: GE 221/Equivalent
Semester Prerequisite: GEOL 221/Equivalent
Applies concepts of physical geology to human interaction with the environment. Geologic resources (e.g., minerals, energy, water) and hazards (e.g., earthquakes, landslides, flooding) are explored. Laboratory includes resource mineral identification, geologic map interpretation, evaluation of land use alternatives, and problem-solving activities related to environmental issues.

GERO 100 Introduction to Human Aging
Term Prerequisite: None
Semester Prerequisite: None
This course provides a basic orientation to the field of gerontology, with emphasis on social aspects: demographics, physiology, psychology, sociology, economics, environment, death and dying, and community and government programs.

GERO 101 Programs and Services for the Aging
Term Prerequisite: GERO 100 Recommended
Semester Prerequisite: GERO 100 Recommended
This course provides a description of the organization and functions of the aging services network, its relationship to the broader human services system, and how the services worker can use or develop community resources for the benefit of older adults.

GERO 110 Self-Renewal in Later Years
Term Prerequisite: None
Semester Prerequisite: None
This course presents a basic orientation to the field of gerontology, with emphasis on social aspects: demographics, physiology, psychology, sociology, economics, environment, death and dying, and community and government programs.

GERO 112 Planning for Retirement
Term Prerequisite: None
Semester Prerequisite: None
This course covers financial matters, legal affairs, physical and mental health, being along, housing choices, employment and volunteer opportunities, community resources, and meaningful use of time. It includes discussion of planning and decision-making skills and development of a personalized plan for retirement.

GERO 113 Investments and Financial Management in Retirement
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of money-management strategies and investments, especially as applied to fixed incomes in retirement. Topics include determining net worth, types of investments, yield, stocks, bonds, mutual funds, and money-management tips and legalities.

GERO 114 Estate Planning for Retirement
Term Prerequisite: None
Semester Prerequisite: None
This course provides practical information on estate planning and the alternatives available for a variety of family situations as people approach retirement. It includes techniques used to plan an estate, preserve and transfer property during lifetime and at death, avoid probate and minimize death taxes and legal expenses.

GERO 115 Memory Improvement Techniques for Older Adults
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for older adults who seek to improve their ability to remember. It examines myths and facts about memory and aging, reviews factors which influence memory, and introduces specific techniques for improving recall.

GERO 119 The Aging Process: Facts, Myths, Changes, and Resources
Term Prerequisite: None
Semester Prerequisite: None
This course includes an overview of facts and myths associated with older adults, including normal physical changes and their implications; social/emotional aspects of aging, including communication issues; and federal, state, and local resources for the older adult.

GERO 120 Identifying Community Programs for Older Adults
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of federal, state, and local health and human services programs for older adults, including information and referral, legal services, mental health services, geriatric assessment, and nursing home advocacy.

GERO 121 Senior Group Program Planning
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview for planning senior adult programs: basic principles of programs and leadership, ideas and resources for activities for older adults, motivating older adults to participate, and scheduling activities.

GERO 125 Volunteers: Recruiting, Retaining, Rewarding
Term Prerequisite: None
Semester Prerequisite: None
This course describes the basic processes of volunteer management: techniques for assessing current and future volunteer utilization; and innovative methods for recruitment, retention and recognition of volunteers. It provides an applied focus to assist supervisors and managers as they recruit and work with volunteers.

GERO 126 Volunteers: Interviewing and Placement
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on volunteer management processes of interviewing and placement, including conducting an effective interview, legal restrictions to the interview process, appropriate placement of volunteers, and termination or reassignment.

GERO 128 Functional Assessment of the Older Adult
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of the multidimensional assessment of health status that is necessary to determine interrelationships between the physical and psychosocial well-being of the older adult.

GERO 129 Maintaining Client/Volunteer Records
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of guidelines that can be used in maintaining client/volunteer records, including decisions regarding appropriate information to record, confidentiality, clients' rights of access, and applications to human service settings. It addresses needs of persons working in agencies in which they need to devise their own record-keeping forms.

GERO 131 Planning for Older Adults with Developmental Disabilities
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of the older adult with developmental disabilities including characteristics, demographics, public policy issues, and functional assessment. Michigan program initiatives are discussed; case studies are presented.

GERO 132 Activities: Older Adults with Developmental Disabilities
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of planning principles and techniques effective in designing meaningful activities for older adults with developmental disabilities. Practice opportunities are included.
GERO 141 Gerontological Practices: Case Assessment and Intervention .5
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of the case management pathway in providing direct services to individual older adults, from intake through service termination. It includes a focus on issues that have added impact on the older person and techniques that are effective in case management for that population.

GERO 145 Working with Older Adults: Nutrition .25
Term Prerequisite: None
Semester Prerequisite: None
This course focuses upon factors affecting adults’ nutritional status, including normal physiological/psychosocial changes that occur with aging, caloric intake, and the effects of activity/exercise and medications. Suggestions are for communicating dietary information to older adult clients and assisting those persons in identifying alternative food sources.

GERO 150 Information Sources for Gerontology .5
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of the literature in gerontology, especially general sources—handbooks, indexes, guides and government sources—and databases in print and electronic formats. Topics include special subject sources, resources available from national aging organizations, government agencies, newsletters in aging, search terms, and designing an effective database search.

GERO 151 Accessing the 1990 Census for Older Adult .25
Program/Services
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of the 1990 census data, with emphasis on trends and projections that will affect programs and services for older adults.

GERO 158 Long Term Care Options .5
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of long-term care options from home care and retirement centers to adult foster care and nursing homes. Appropriate placement, financial aspects, and quality care issues are discussed.

GERO 161 Issues of Aging: Sexuality .25
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of issues relating to sexuality and older persons; societal attitudes, sexual behavior patterns, physiological changes, psychological responses, and special situations, such as institutional settings.

GERO 164 Medication and Alcohol Use Among Older Adults .5
Term Prerequisite: None
Semester Prerequisite: None
This course examines medication and alcohol use among older adults including prescription and non-prescription medicines, side effects, drug interactions, and strategies for using medicines wisely. Students learn to identify a substance-abuse situation and how to make appropriate referrals.

GERO 165 Dementia: Concepts and Causes .5
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to current concepts of dementia (Alzheimer's disease and related disorders) in older persons. It provides an overview of social, psychological, and environmental factors resulting in dementia. Relationships to depression, techniques for communicating with older persons with dementia, family dynamics, and community resources are discussed.

GERO 166 Housing Options and Issues for Older Adults .25
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of housing issues and options for the older adult, including financial and legal implications.

GERO 167 Nursing Home Issues: Choices, Realities, Alternatives .25
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of current nursing home issues, including the role of nursing homes in the continuum of care, issues and concerns relating to care, funding of care, review of residents' rights, guidelines for choosing a home, and guidelines for visiting nursing home residents.

GERO 169 Legal Rights of Older Adults: Disability and Consent .5
Term Prerequisite: None
Semester Prerequisite: None
This course focuses upon issues such as guardianship, conservatorship, power of attorney, the living will, joint tenancy, nursing home residency, and civil commitment, including actual and perceived choices a person has as aging and illness occur.

GERO 170 Depression: Recognition and Treatment .5
Term Prerequisite: None
Semester Prerequisite: None
This course provides an examination of depression in later life. Symptoms, causes, "minor depressions," 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.

GERO 171 Techniques for Caring for Persons with Dementia .75
Term Prerequisite: None
Semester Prerequisite: None
This course provides an introduction to techniques for working with older adults with Alzheimer's disease and related disorders. The psychosocial needs of individuals and their families are a primary focus. Communication techniques, programming approaches, handling problem behaviors, a task breakdown approach, environmental adaptations, and role of the family are discussed.

GERO 173 Activities: Older Adults with Alzheimer's/Related Disorders .5
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of planning principles and processes effective in designing meaningful activities for older adults with Alzheimer's disease and related disorders. Practice opportunities are included.

GERO 174 Working With Older Adults: Minority Aging .75
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on the special needs of Asian/Pacific American, African American, Native American, and Hispanic American elders, including demographic aspects of minority aging, special conditions of physical health, psychological aspects, social problems, and federal policies.

GERO 176 Hearing Loss and Aging: Maintaining Communication .25
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on causes, effects, and practical methods of compensating for hearing loss in older adults, including the makeup and function of the ear, the effects of normal/abnormal changes on hearing ability, and implications for communicating with the hearing-impaired older adult.

GERO 177 Vision Adaptation in Middle/Later Years .25
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of vision changes in middle/later years and ways to assist older persons experiencing these changes, including normal changes of aging, common diseases and conditions of the eye, treatment approaches, and adaptations to maintain independence. Community resources to assist those with visual adaptation needs are included.

GERO 178 Adapting Your Surroundings: Easier Living in Later Life .5
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of changes one can make in home surroundings to accommodate gradual or sudden physical or mental, normal or illness-related changes in later years. It includes special emphasis on room and cupboard arrangement, hearing and visual aids, building access through entrances/exits, and available community resources.

GERO 179 Healthcare Insurance Programs and Supplemental Policies: Aged .25
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of Medicare and Medicaid programs, including recent and proposed changes at the federal and state levels. Information on supplemental health and long-term care insurance coverage is included.

GERO 184 Ethical Issues in Working with Older Adults .5
Term Prerequisite: None
Semester Prerequisite: None
This course considers major ethical issues faced by caregivers of older adults, including determination of incompetency, use of advance directives and proxy designation makers, withdrawal of care from the debilitated and demented, claim of older adults to life-extending resources, responsibility of families to care for elderly members, and assisted suicide.

GERO 193 Elder Abuse .25
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on recognition of causes and categories of elder abuse, with available resources for intervention.

GERO 194 Psychological Aspects of Pain Management in the Elderly .25
Term Prerequisite: None
Semester Prerequisite: None
This course examines the relationship between pain and quality of life. It introduces psychological techniques for pain management and the hospice concept of a "therapeutic window" in relation to pain management in long-term care.
GERO 197 - Grief and Loss in Later Life
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of grief and loss and its impact on the later lives of older persons. Topics include attitudes toward death and dying; stages and symptoms of grief, abnormal grief reactions, multiple losses of older persons, and community resources.

GERO 198 - Advanced Grief/Loss Counseling: Strategies for Practitioners
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview of specific counseling techniques used by practitioners in working with older adults, including the professional "helping" and their attitudes on grief and loss, the effect of the practitioner's attitude on the process of helping the grieving person, specific counseling techniques, and identification of community resources.

GERO 199 - Working with Older Adults: Dying and Death
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on issues and skills critical to caregivers working with terminally ill older adults, including examining one's attitudes and feelings toward dying, death, and older adults; understanding the behavior of the dying person; techniques for communicating with the terminally ill; working through personal grief; and exploring alternatives to institutionalized death.

GERO 202 - Mental Health and Aging
Term Prerequisite: GER 100
Semester Prerequisite: GER 100
This course presents skills and adaptations for maintaining good mental health in later life. It explores family and social factors; personality, stress and loss; assessment, treatment, and care of older persons with mental disorders; and response of the mental health system and aging services network. It includes communication skills for interacting with older adults.

GERO 204 - Aging and Health
Term Prerequisite: GER 103
Semester Prerequisite: GER 100
This course examines aging and health from an applied perspective for the human services provider, including implications of normal/patological changes in body systems and strategies used in working with health systems on behalf of older adults. Emphasis is on the assessment and maintenance of function, and benefits of lifelong health promotion.

GERO 282 - Gerontology Field Placement I
Term Prerequisite: Admission to Field Placement, Departmental Approval
Semester Prerequisite: Admission to Field Placement, Departmental Approval
This course combines classroom training with field placement (eight hours per week) at a community agency or institution serving older persons. Students apply knowledge about structure, funding, and organization of aging services; explore community resources; demonstrate appropriate work habits; assess their attitudes and career skills in gerontology; and relate current aging research to practice.

GERO 284 - Gerontology Field Placement II
Term Prerequisite: GER 201, GER 202
Semester Prerequisite: GER 282, 12 Program Credits, Departmental Approval
This course provides advanced field placement experience at a community agency or institution serving older persons (eight hours per week), combined with classroom training in practice concepts related to service delivery to older persons. Students learn resources and systems, develop networking skills, mobilize resources on behalf of older individuals or groups, and demonstrate their suitability for a career in gerontology.

GERO 290 - Advanced Techniques in GIS
Term Prerequisite: LAT 204
Semester Prerequisite: GER 204
This course expands upon the techniques, methods, and processes involved in developing a full GIS program. Different GIS software packages will be explored, as well as related databases and completed projects.

GERO 299 - Applications in Geographic Information Systems
Term Prerequisite: LAT 205, LAT 208/Equivalent
Semester Prerequisite: GER 205, GER 208/Equivalent
This course specifically deals with all of the possible application areas for GIS, both present and future. Applications such as toxic materials, traffic flow, mining, forestry, natural resource, energy, and communication will be highlighted. A semester-long application project of your choice will be developed on the computer.

GERO 211 - Workation Basic
Term Prerequisite: None
Semester Prerequisite: None
This course will teach new users the skills needed to operate and maintain an intergraph Unix Workstation on a daily basis. The student will learn the computer orientation and necessary software for GIS and landscape planning purposes.

GERO 213 - Advanced Microstation 3-D
Term Prerequisite: LAT 203
Semester Prerequisite: GER 203
This course is a continuation of the basic microstation course and deals with advanced user commands, programming language and 3-D aspects of this computer-aided drafting and design package.

GERO 220 - Hydrological Systems
Term Prerequisite: None
Semester Prerequisite: None
This course covers 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.

GERO 221 - Landforms and Soil Systems in GIS
Term Prerequisite: None
Semester Prerequisite: None
This course will discuss the important classifications of landform and soil systems. The relevance of these systems in the GIS environment will be highlighted. The importance of these systems in the information processing, land use, land planning, site design, and landscape form arenas will be emphasized.

GERO 223 - Environmental Resource Management
Term Prerequisite: None
Semester Prerequisite: None
This course will cover the broad spectrum of environmental resources such as forestry, agriculture, mining, soils, vegetation, and their impact and management in current computer information systems. Resources in the land planning disciplines will be highlighted as to their function in the present environmental processes, both public and private.

GERO 240 - Basic Map Orientation and Construction
Term Prerequisite: None
Semester Prerequisite: None
The basic principles, functions, and origins of maps will be discussed. The student will construct various types of maps. Computer-aided map planning and design along with how to read, print, and design maps will also be covered.

GERO 241 - Air Photo Interpretation
Term Prerequisite: Departmental Approval
Semester Prerequisite: GER 240
This course will include the development of skills necessary for basic interpretation of aerial photography data, how it is collected, and the ability to analyze maps created from the data collected in this method. The current technology and GIS relationship will be highlighted.

GERO 243 - ORACLE Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course will explore the database software package ORACLE. The introduction to databases for the beginner followed by a step-by-step approach to ORACLE. This is a hands-on computer course.

GERO 244 - Beginning UNIX: GIS Environment
Term Prerequisite: None
Semester Prerequisite: None
This is a beginning course which acts as an introduction to the UNIX operating system. UNIX System V, the AT & T offered release, will be the version covered in this course. UNIX as it relates to operating systems in the GIS environment will be highlighted. This is a hands-on computer exercise course.
GRET 245 MDL Programming: Beginning 3
Term Prerequisite: LAT 213
Semester Prerequisite: GRET 213
This course will begin with an introduction to the Microstation Development Language (MDL). The student will learn to work with and implement a project using MDL. The structure and importance of using MDL on various projects will be highlighted.

GRET 246 MDL Programming: Advanced 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: GRET 245
This course will expand upon the techniques used in the beginning course using the MDL programming language. A class project will explain possible uses for this language.

GRET 248 Microstation Graphic Analyst 3
Term Prerequisite: LAT 204
Semester Prerequisite: GRET 204
Microstation Analyst (MGA) is an advanced software package dealing with GIS MGA, which generates topologically-structured files from design files for use in performing spatial analysis. It will also cover system query sets and answers to questions posed to topological files.

GRET 295 GRET Independent Study 3
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required.

GRET 296 GRET Project Lab 4
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This project lab is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required.

GRET 297 GRET Project Lab 2
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This project lab is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design is required.

GRMN 101 Elementary German I 4
Term Prerequisite: None
Semester Prerequisite: None
First course of a two-semester sequence in elementary German. This course offers systematic practice in the four basic language skills: listening comprehension, speaking, reading, and writing. Communicative approach is combined with a solid grammar foundation, as well as familiarization with contemporary life and culture in Germany, Austria, and Switzerland.

GRMN 102 Elementary German II 4
Term Prerequisite: GRMN 101/Equivalent
Semester Prerequisite: GRMN 101/Equivalent
Second course of a two-semester sequence in elementary German. This course offers more advanced practice in the four basic language skills: listening comprehension, speaking, reading, and writing. Communicative approach is combined with more complex structure as well as familiarization with contemporary life and culture in Germany, Austria, and Switzerland.

GRMN 115 Seminar: Conversational German I 3
Term Prerequisite: None
Semester Prerequisite: None
The first course in a two-semester sequence for persons with little or no knowledge of German. Emphasizes listening and speaking skills. Students learn correct pronunciation, essential language structures, and a practical vocabulary applied in conversational exchanges. Aspects of German culture are introduced through multi-media presentations.

GRMN 116 Seminar: Conversational German II 3
Term Prerequisite: GRMN 115/Equivalent
Semester Prerequisite: GRMN 115/Equivalent
The second course in a two-semester sequence for persons with little or no knowledge of German. Emphasizes listening and speaking skills. Students learn correct pronunciation, essential language structures, and a practical vocabulary applied in conversational exchanges. Aspects of German culture are introduced through multi-media presentations.

GRMN 201 Intermediate German I 4
Term Prerequisite: GRMN 102/Equivalent
Semester Prerequisite: GRMN 102/Equivalent
First course of a two-semester sequence in intermediate German. Students receive intensive practice in the basic skills: speaking, listening comprehension, reading, and writing. Course includes a thorough review of German grammar, 20th century short-story readings, composition writing, and German culture. Class is taught mainly in German.

GRMN 202 Intermediate German II 4
Term Prerequisite: GRMN 202/Equivalent
Semester Prerequisite: GRMN 201/Equivalent
Second course of a two-semester sequence in intermediate German. Students receive advanced practice in the basic skills: speaking, listening comprehension, reading, and writing. Course includes a thorough review of advanced structures, short-story readings, a short novel, composition writing, and German culture. Class is taught mainly in German.

HFCE 150 Cardiac Education 5
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to information about the cardiac disease process, rehabilitation, and prevention techniques. The student will learn the role of various factors related to cardiac disease. This course introduces the student to eight hours of various topics related to health awareness, wellness and/or prevention. This is presented in a seminar format.

HFCE 151 Cardiac Rehabilitation Exercise 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This continuing course includes medically monitored exercise and education, which emphasizes reducing the risk factors known to contribute to heart disease. Methods and level of exercise are determined by the participant's physician and the program medical director. Monitored by professional staff.

HFWE 100 Health and Wellness Seminar 5
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to six hours of various topics related to health awareness, wellness and/or prevention. This is presented in a seminar format.

HFWE 101 Health and Wellness Seminar 1
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to six hours of various topics related to health awareness, wellness and/or prevention. This is presented in a seminar format.

HFWE 131 Osteoporosis Prevention I 2
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to principles that can aid in the prevention of osteoporosis. The student will learn risk factors, nutritional information, and progressive strength and flexibility exercises related to osteoporosis prevention.

HFWE 132 Osteoporosis Prevention II 1
Term Prerequisite: HF 130, HF 131
Semester Prerequisite: HFWE 131
This course continues the focus on osteoporosis prevention. The student will continue progressive strength and flexibility exercises, current research, and nutrition information.

HFWE 145 Nutrition: Critical Issues 2
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to nutrition and its role in promoting better health. The student will learn about lifestyle issues, weight management, and related topics.

HFWE 146 Choice for Change Weight Control Program 2
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to a weight management program that follows the American Dietetic guidelines. The student will learn the principles of nutritionally sound low-fat eating and the necessity of regular exercise for permanent weight loss.

HFWE 148 Staying on Track: Lifelong Weight Management 1
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to nutrition and its role in promoting better health. The student will learn about lifestyle issues, weight management, and related topics.

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HFWE 149 Cholesterol Management
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to a dietary program that can assist in lowering cholesterol levels. The student will learn ways to identify high cholesterol and saturated fat foods substituting them with a practical, nutritionally sound food plan.

HFWE 161 Self Awareness: Key to Wellness
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to aspects of self-awareness that can lead to greater vitality in all aspects of life. The student will learn ways in which he/she is influenced by family and cultural beliefs. Tools for changing behavior will be presented.

HFWE 163 Healthy Lifestyles
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to lifestyle skills that lead to better health. The student will learn healthy nutritional habits, basic fitness concepts, positive stress reduction, and development of a personalized healthy lifestyle plan. Assessment skills and wellness concepts will be put into practice.

HFWE 167 The Consumer and Health Issues
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the study of health from a holistic perspective—seeing life as a total system. The student will learn awareness and tools for the “Triangle of Health” including the physical, mental, and spiritual. Alternatives in health care will be examined.

HFWE 188 Un-smoking for Life
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the habit, patterns, and health effects of smoking. The student will learn ways to permanently stop smoking and gain information to make healthy lifestyle choices.

HFWE 189 Fit for Life Exercise
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the 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.

HFWE 190 Positive Approaches to Stress
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the role stress has in our lives: physically, emotionally, and mentally. The student will learn to identify his/her own stress styles and become aware of options with coping techniques.

HFWE 181 Stress Management
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the nature of stress, how it affects us, and techniques to handle it. The student will learn to develop individualized strategies to deal with his/her stress and increase overall health.

HFWE 182 Stress Management for Parents
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the effects of stress in child-rearing, for childcare providers and parents. The student will gain an understanding of how stress influences family relationships and learn techniques to apply to daily life.

HFWE 261 Aerobic Groups
Term Prerequisite: Fitness Evaluation, Departmental Approval
Semester Prerequisite: Fitness Evaluation, Departmental Approval
An opportunity for students to maintain and/or improve their fitness level through supervised aerobic exercise sessions and health education. Emphasis is on regular, safe exercise and healthy lifestyles.

HFWE 270 Massage Therapy - Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to Swedish massage. The student will learn the history, theory, terminology, physiology and techniques of Swedish massage.

HFWE 271 Massage Therapy - Intermediate
Term Prerequisite: HF 270
Semester Prerequisite: HFWE 270
Following a review of HFWE 270 the student is introduced to specialized massage techniques. The student will learn contraindicated techniques, business aspects, and exploration of Swedish acupressure.

HFWE 272 Independent Study Massage Practicum
Term Prerequisite: HF 271
Semester Prerequisite: HFWE 271
This course introduces the student to an individualized study of massage techniques. The student will perfect basic body massage technique during a pre-intended 100 hours.

HFWE 273 Human Structural Dynamics for Massage Therapy
Term Prerequisite: None
Semester Prerequisite: None
This course provides the massage therapy student with an in-depth view of the areas of anatomy which are particular to massage, primarily within the musculoskeletal and nervous systems.

HFWE 275 Touch for Health I
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the comprehensive ancient oriental disciplines in conjunction with the modern practice of applied kinesiology. The student will learn basic muscle techniques to improve posture, balance, which can affect the mental, emotional and physical state.

HFWE 276 Touch for Health II
Term Prerequisite: HF 280
Semester Prerequisite: HFWE 275
This course introduces the student to additional techniques and applications of applied kinesiology. The student will learn additional and reactive muscles and balancing techniques.

HFWE 277 Polarity Therapy I
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to polarity therapy as a form of massage that balances the life energy of the physical body. Hands-on application of balancing techniques, basic theory and philosophy are taught to enhance relaxation and awareness of energy flow in the body.

HFWE 278 Polarity Therapy II
Term Prerequisite: HF 277
Semester Prerequisite: HFWE 277
This course will deepen the student’s understanding of polarity therapy. Advanced hands-on techniques and sequences will be taught to balance the various energy patterns of the physical body. Lectures will be on the philosophical, energetic, and spiritual principles that sustain and vitalize the physical form.

HIST 150 African American History
Term Prerequisite: None
Semester Prerequisite: None
Traces the developments which led to the African slave trade, the slave systems in North and South America, the cultural heritage of the African American in the Americas, and the problems of race in North American culture.

HIST 210 Studies in American History
Term Prerequisite: HIST 113/HIST 112, Instructor Approval
Semester Prerequisite: HIST 211/HIST 212, Instructor Approval
Covers problems of research, writing, and philosophy and interpretation of history, involving a detailed examination of a particular area of American history.

HIST 211 U. S. History to 1877
Term Prerequisite: WR1 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WR1 121 (ENG/WRI 122 Recommended)
A history of the United States from colonial beginnings through reconstruction.

HIST 212 U. S. History: 1877 to the Present
Term Prerequisite: WR1 121, HUM 121/HUM 150/HUM 151/PHL 201/PHL 202 (ENG/WRI 122 Recommended)
Semester Prerequisite: WR1 121 (ENG/WRI 122 Recommended)
A history of the United States from the end of reconstruction to the present.

HIST 214 African History and the Third World
Term Prerequisite: WR1 121, HUM 212/HUM 150/HUM 151/PHL 201/PHL 202 (ENG/WRI 122 Recommended)
Semester Prerequisite: WR1 121 (ENG/WRI 122 Recommended)
Surveys African history with emphasis on precolonial and colonial Africa; nationalism and the struggle for independence; colonialism and economic development/underdevelopment; and cultures and traditions as factors in development. Covers some of these topics in three or four other countries of the third world, e.g., Brazil, Pakistan, and Indonesia.
HIST 220  Michigan History  
Term Prerequisite: WRI 121 (ENGL/WRI 122 Recommended)  
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)  
A survey of the political, economic, and social development of Michigan from precolonial times to the present.

HIST 230  British History  
Term Prerequisite: WRI 121 (ENGL/WRI 122 Recommended)  
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)  
A survey of the political, economic, legal, constitutional, and social forces which shaped British history and society from earliest times to the present with special emphasis on the interactions of British and American institutions, values, and ideas.

HIST 260  Conflict and Revolution in Southern Africa  
Term Prerequisite: WRI 121 (ENGL/WRI 122 Recommended)  
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)  
Study of historical-cultural origins and contexts of conflicts in Zimbabwe and Southern Africa with emphasis on socioeconomic causes of conflicts; cultural differences and conflicts; problems of development as sources of conflicts; inter-African conflicts; settler-African conflicts; international dimensions of conflicts; and solutions to conflicts.

HIST 263  Seminar: Soviet Union and CIS  
Term Prerequisite: None  
Semester Prerequisite: None  
A survey of the Soviet Union and its people from the Russian Revolution of 1917 to the present. Also examined will be the multinational character of the USSR and the forces that have shaped Soviet, society, politics, including U.S.-Soviet relations.

HIST 264  Seminar: A Television History of the Vietnam War  
Term Prerequisite: None  
Semester Prerequisite: None  
Vietnam: A Television History will examine, through the medium of television, the war in Vietnam from August 1945 to the fall of Saigon in April 1975. It will also assess the long-term effects of the war on both U.S. domestic and foreign policy.

HIST 265  Seminar: The American Legal Tradition  
Term Prerequisite: None  
Semester Prerequisite: None  
An 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.

HIST 295  Independent Study  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Departmental Approval  
Special research projects and/or individual readings in history. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department.

HIST 296  Independent Study  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Departmental Approval  
Special research projects and/or individual readings in history. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department.

HMFS 101  Introduction to Hospitality and Food Service Operations  
Term Prerequisite: None  
Semester Prerequisite: None  
Introduction to the hotel, motel, food service industry explaining the individual roles of the various departments in food service and lodging operations.

HMFS 103  Training and Coaching Techniques  
Term Prerequisite: None  
Semester Prerequisite: None  
The purpose of the course is to help the student develop supervisory skills needed to train employees; devise economical and efficient work methods; improve daily-to-day performance for subordinates through sound coaching techniques; and assist in setting realistic job performance standards.

HMFS 105  Hotel and Restaurant Human Resource Management  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is a survey of principles and practices for managing human resources in the hospitality industry. Includes such topics as staffing, discipline, hiring, termination, and their corresponding rules and regulations.
HMFS 192 Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Explore a topic or problem of interest through readings, research, etc.; at least 16 hours per credit.

HMFS 193 Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Explore a topic or problem of interest through readings, research, etc.; at least 16 hours work per credit.

HMFS 194 Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Explore a topic or problem of interest through readings, research, etc.; at least 16 hours of work per credit.

HMFS 200 HMFS Management Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Prerequisite: Second-year students and Departmental approval. This program is designed to offer the student an out-of-the-classroom and on-the-job work experience. The food program coordinator will assist the student externs in finding a position.

HMFS 201 Hotel-Restaurant Merchandising
Term Prerequisite: None
Semester Prerequisite: None
Sales promotion and methods used to obtain public recognition. Presents a practical understanding of the operating statement and precisely where, how, and why the sales effort fits into the total earning and profit picture of the hospitality operation. Emphasis is on producing business at a profit.

HMFS 203 Hotel-Restaurant Law
Term Prerequisite: None
Semester Prerequisite: None
To create an awareness of the responsibilities and rights which the law imposes upon and grants to the innkeeper; recognition of potential legal problems so as to minimize legal action against the property.

HMFS 204 Human Relations/Supervisory Development
Term Prerequisite: None
Semester Prerequisite: None
A course covering the role of management in the hospitality industry; specific emphasis on the supervisor's role as a leader, recruiter, trainer, and personnel manager.

HMFS 205 Hotel-Restaurant Management
Term Prerequisite: None
Semester Prerequisite: None
Subjects and problems of hospitality management: general concepts, personnel, guests, and technical problems of operations. For management in the hospitality industry or second-year HMFS student.

HMFS 206 Front Office Procedures
Term Prerequisite: None
Semester Prerequisite: None
Organization, control, and operation of the front office in the reservation and sale of rooms, and service. Keeping of accurate accounts and presenting bills and receipts of payment.

HMFS 207 Financial Control and Management I
Term Prerequisite: None
Semester Prerequisite: None
A systematic, integrated study of hotel-motel and food institutional activities. Principles, problems, and practices related to financial management will be presented. Financial statements, front office procedures, and the interpretation of accounts and statements unique to the hospitality industry will be included.

HMFS 208 Financial Control and Management II
Term Prerequisite: HMFS 207
Semester Prerequisite: HMFS 207
Expands the student's accounting knowledge and develops more comprehensive knowledge and skill in accounting practices and procedures for the restaurant and hotel manager. A project is required for a final grade.

HMFS 210 Hotel/Restaurant Liability and Loss Prevention
Term Prerequisite: None
Semester Prerequisite: None
This course includes organization for a security program, protection of the physical facilities, guest protection, emergencies, and internal and departmental security measures.

HMFS 213 Energy Management and Control
Term Prerequisite: None
Semester Prerequisite: None
Although some course material is geared toward types of energy sources and technical terms, it is presented as a management-oriented class.

HMFS 214 Supervisory Housekeeping
Term Prerequisite: None
Semester Prerequisite: None
Provides an overview of the fundamentals of housekeeping management. This course describes the management functions, tools, and practices required in today's lodging and institutional housekeeping departments.

HMFS 215 Hotel-Restaurant Marketing
Term Prerequisite: None
Semester Prerequisite: None
As the hospitality industry competition becomes keener, today's guests come to expect a greater value and specific services. The hospitality industry is becoming more specialized and sophisticated. Strategic market planning plays a crucial role as a means of surpassing the competition and of meeting today's guests' needs.

HMFS 216 Maintenance and Engineering
Term Prerequisite: None
Semester Prerequisite: None
To provide essential technical information in electronics, air conditioning, plumbing, heating, electricity, and acoustics; to establish preventative maintenance routine; to make necessary decisions.

HMFS 223 Club Management and Service
Term Prerequisite: None
Semester Prerequisite: None
Convention management is an integral part of today's hospitality industry. This course provides insight into convention marketing, salesmanship, detail, execution, communication, and management. A comprehensive study of methods and techniques for better service.

HMFS 299 Convention Management and Service
Term Prerequisite: None
Semester Prerequisite: None
This course offers various approaches to the operation of resort properties. Details are presented in planning, development, financial investment management, and marketing. This course also examines the future and the impact of the condominium concept, time sharing, technological changes, and the increased cost of energy and transportation.

HMFS 232 Food and Labor Cost Control
Term Prerequisite: None
Semester Prerequisite: None
This course covers the essential principles and procedures to control food, beverage, and labor cost. Sales, income, and resources within the food service industry are also analyzed.

HMFS 233 Food Service Sanitation
Term Prerequisite: None
Semester Prerequisite: None
This course is certified by the State of Michigan and Education Foundation in food sanitation procedures. The class is designed to enlighten the food service manager in such areas as: cleanliness, construction of equipment and facilities, safe food handling procedures, and several other aspects concerns kitchen sanitation.

HMFS 251 Wine Appreciation
Term Prerequisite: None
Semester Prerequisite: None
The student will be familiarized with the five basic types of wine; a short history of wine and how wines are made; a mastery of the presentation and serving of wines; and judging for appearance, bouquet, and taste. The class will learn how to choose and store wines.
HMFS 252 Wines of America 2
Term Prerequisite: None
Semester Prerequisite: None
A survey of wine growing areas of the United States with emphasis on the vari-
etial selections of California, New York, Michigan, and Ohio. A study of wine
making, comparative tasting, and field trips are used to acquaint the student with
the wine industry in America.

HMFS 253 Wines of France 2
Term Prerequisite: HMFS 251/HMFS 252
Semester Prerequisite: HMFS 251/HMFS 252
An in-depth survey of the major wine growing regions of France. Particular
emphasis will be given to the geographical and viticultural tradition which pro-
duce the distinctive wines that have given France its world famous reputation
for fine table and sparkling wines.

HMFS 254 Mixology 4
Term Prerequisite: None
Semester Prerequisite: None
This course provides the student with a mastery of over 150 mixed beverages. It
teaches the combination of the arts of efficient mixology and hospitality with con-
trol that distinguishes the "Mixologist" from the ordinary bartender. Mixology
emphasizes incorporating speed and accuracy.

HMFS 260 Gourmet Basic Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
The course is designed to teach the beginning cook correct techniques in pre-
planning, preparation, service, and clean-up involved in a meal. The student will
become familiar with shopping lists, menus, recipes, costing, cooking measuring
units, and basic nutritional information. Student preparation.

HMFS 261 Gourmet Italian Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
This course covers basic cookery techniques within regional areas of Italy. Local
talent and community Italian experts contribute to the culinary bill of fare.
Student preparation.

HMFS 262 Gourmet Foreign Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
This course covers basic cookery using foreign foods from around the world,
prepared and tasted by the student. Wine and cheese samplings are also a part of
this course. Student preparation.

HMFS 263 Gourmet American Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for the working person and explores four great cuisines:
Regional American, French, Italian, and German. The course will include plan-
ning, preparing, costing, serving, and eating gourmet meals. Special attention
will be provided for budgeted low-cost preparation of restaurant gourmet
entrees. Student preparation.

HMFS 264 Gourmet Barbecue Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
This spring and summer-orient course explores innovative techniques of
preparing food outside. Meat, vegetables, hors d'oeuvres, salads, and desserts
are prepared throughout the term. Student preparation.

HMFS 266 Gourmet Chinese Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
Chinese cooking is noted for its diversity of taste, texture and aroma. Chinese
dishes to be prepared include: sweet and sour pork, chicken almond ding, and
egg rolls, which will accentuate these characteristics through the use of sauteing
and "red" cooking techniques. Student preparation.

HMFS 269 Gourmet Mexican Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
Introduction to basic and exotic Mexican and Spanish Cookery, including proper
pronunciation of Mexican dishes and corresponding symbols. Student preparation.

HMFS 270 Microwave Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
A presentation in production of various types of food geared toward introducing
the student to the microwave oven and its capabilities. Student preparation.

HMFS 272 Canning and Preserving 2
Term Prerequisite: None
Semester Prerequisite: None
This course includes the basics in water bath methods and steam kettle canning,
smoking meats, dehydrating fruits and vegetables and jelly making, Student
preparation.

HMFS 273 Gourmet Cajun Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
Identification of various regional influences and cuisines, which form the Cajun
style, including Creole Cajun and Louisiana cookery. Identification of indigenous
ingredients, seasonings, and basic cooking techniques used in Cajun cookery.
Discussions in class will cover historical as well as contemporary perspectives
on these original American cuisines.

HMFS 274 Lean Gourmet Cookery 2
Term Prerequisite: None
Semester Prerequisite: None
Basic cookery using less fat and salt, fresh herbs, spices, and chicken broth
instead of cream. The focus of this class is on the food we eat. The student will
learn the composition of food and why some foods make better choices for our
diets than other foods.

HMFS 275 Bakery Products 2
Term Prerequisite: None
Semester Prerequisite: None
An approach to familiarize the student with bakery products. This course is
taught by a professional baker, who will demonstrate various types of baked
goods and products from the kitchen. Student preparation.

HMFS 280 Food Specialties I 3
Term Prerequisite: None
Semester Prerequisite: None
A basic course in the decoration and presentation of cold foods. This course will
introduce the student to cold food specialization, vegetable carving, hors d'oeuvres,
canapes, the use of spoons, sauces, dressings, and complete buffet set-up. Garde
Manager is the showcase for the artistic presentation of foods. Student preparation.

HMFS 281 Food Specialties II 3
Term Prerequisite: None
Semester Prerequisite: None
This course will help the student develop the necessary skills in the preparation
of soups and sauces from scratch, as well as in the utilization of convenience
food items such as food bases and commercial mixes. The student will learn
through hands-on preparation of these items. Student preparation.

HMFS 282 Food Specialties III 3
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to expose the student to the tools, techniques, and skills
required to carve a block of ice. The student will be carving from a block of ice
before the conclusion of the course. This is a hands-on course.

HONR 151 Honors Colloquy I 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An interdisciplinary forum for students and faculty of the Arts and Sciences
Honors Program. Consists of presentations by recognized experts in such fields
as science, humanities, mathematics and computer science, communication,
education, and the social sciences, followed by discussion and interchange of
ideas. Requires follow-up written reports.

HONR 152 Honors Colloquy II 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An interdisciplinary forum for students and faculty of the Arts and Sciences
Honors Program. Consists of presentations by recognized experts in such fields
as science, humanities, mathematics and computer science, communication,
education, and the social sciences. Requires research writing using methodolo-
gies of the Arts and Sciences disciplines.

HORT 102 Introduction to Ornamental Horticulture 2
Term Prerequisite: None
Semester Prerequisite: None
An introductory course involving botanical and horticultural principles and prac-
tices. Basic plant structures and their functions as well as soil and plant nutrition
are discussed. Job opportunities and the role of horticulture will also be covered.
Field trips and laboratory experiments will highlight the course.
HORT 105 - Pests and Problems of Ornamental Plants
Term Prerequisite: None
Semester Prerequisite: None
This course is for the professional or homeowner interested in a knowledge of basic environmental and specific past pests of trees, shrubs, perennials, and turf. Problems related to soil, light, water, planting, and fertilizer, as well as insects, diseases, vertebrates, integrated past management, and foliar plant health concepts will be thoroughly discussed.

HORT 107 - Beginning Floral Design
Term Prerequisite: None
Semester Prerequisite: None
This is an introductory course for students interested in learning the principles of floral design. Tools and techniques as well as basic arrangement shapes are learned. "Hands-on" experiences will use fresh, silk, and dried flowers to create traditional and contemporary designs.

HORT 109 - Contemporary Floral Design
Term Prerequisite: LAT 107
Semester Prerequisite: HORT 107
Contemporary floral designs are taught as well as theme arrangements, tools, and techniques. The basic principles of design are reviewed with the student transferring techniques to stylized arrangements. This is a "hands-on" course with participants working with floral materials each week.

HORT 110 - Special Occasion Floral Design
Term Prerequisite: LAT 107
Semester Prerequisite: HORT 107
This course is designed for the advanced floral designer who has demonstrated the ability to apply the principles of design. Wedding designs covered include colonial, cascade, crescent, and arm bouquets, in addition to basic funeral designs. This is a "hands-on" class with students working with floral materials each week.

HORT 143 - Cut Flower, Foliage and Potted Plant Identification
Term Prerequisite: None
Semester Prerequisite: None
The functional aspects of plant material commonly found in the floriculture industry will be covered. The identification of cut flowers, cut foliage, potted and foliage plants will be required. A course that would benefit the floral designer, greenhouse grower, or landscape designer.

HORT 230 - Plant Propagation and Nursery Operations
Term Prerequisite: Departmental Approval
Semester Prerequisite: HORT 102
This course will cover the basics of plant propagation and nursery operations. It will focus on the process of set-up, planting, and follow-up maintenance. The tools and techniques of seed propagation, as well as cuttings, grafting, budding, and layering will be emphasized. Knowledge of plant selection, soils, pruning, harvesting, and marketing nursery products will be included.

HORT 235 - Greenhouse Structures and Environment
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to the construction and operation of a commercial greenhouse. Types of greenhouses, including construction materials, are discussed. Environmental control such as heating, cooling, and irrigation practices and procedures are presented. In addition, methods of planting, fertilizing, and insect and disease control are also included to provide a basis for knowledge of greenhouse crop production.

HORT 236 - Greenhouse Ornamentals
Term Prerequisite: None
Semester Prerequisite: None
This is an advanced course for the greenhouse grower. The course will cover the production techniques for cut flowers, holiday crops, and other greenhouse ornamentals. Topics of discussion will include scheduling and timing crops, spacing, production costs, and cultural practices.

HORT 237 - Bedding Plant Production
Term Prerequisite: LAT 102
Semester Prerequisite: HORT 102
An advanced course for the greenhouse grower to produce healthy bedding plants at a profit. Topics include scheduling, spacing, and production costs as well as cultural practices. New varieties will also be presented.

HORT 238 - Garden Center and Nursery Sales Management
Term Prerequisite: None
Semester Prerequisite: None
This course provides business principles for retail sales managers. A thorough discussion of management topics is presented. Emphasis is placed on planning and organizing a garden center, nursery, greenhouse, or florist operation. Effective pricing and merchandising strategies as well as advertising and display techniques are discussed.

HORT 295 - Landscape Independent Study
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This independent study is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required.

HORT 296 - Horticulture Project Lab
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This independent study is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required.

HUMS 110 - Seminar: Stratford Theater Trip
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
A "cultural practicum" providing students the opportunity to experience exemplary theatrical productions. Cultural breadth and historical perspective are achieved by attending performances, lectures, and interacting with professionals. Skills of critical analysis are also exercised through exposure to fine classical writing and assessment of both oral interpretation and text.

HUMS 120 - Western Art and Music History
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the masterpieces of art and music from Pre-Renaissance times to the twentieth century. Audio and visual material will be used to illustrate artistic and musical contributions of Europe and America to the development of Western culture.

HUMS 160 - Mythology
Term Prerequisite: None
Semester Prerequisite: None
Classical Greek and Roman myths constitute the first half of the course with the remainder chosen from at least two of the following areas: African, American, Far Eastern, Medieval European, Near Eastern, or Norse. Reading and analysis of primary sources in translation and their cross-cultural comparison are emphasized.

HUMS 211 - History of Art I
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
First of a two-course sequence introducing students to the history of painting, sculpture, and architecture in world civilizations. Course emphasizes European, Asian, Islamic, and American contributions to the development of art from Pre-Renaissance times to the sixteenth century. Visual materials will illustrate and compare historical styles and artistic concepts.

HUMS 212 - History of Art II
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
Second of a two-course sequence introducing students to the history of painting, sculpture, and architecture in world civilizations. Course emphasizes European, Asian, African, and American contributions to the development of art from the seventeenth to the twentieth century. Visual materials will illustrate and compare historical styles and artistic concepts.

HUMS 213 - World Civilizations I
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
Surveys the cultural traditions of major civilizations in Africa, Asia, Europe, and the Americas to approximately the seventeenth century. Emphasizes the contributions of early civilizations to the creativity, richness, and diversity of the human condition.

HUMS 214 - World Civilizations II
Term Prerequisite: WRI 121, HUM 212/HUM 150/HUM 151/PHL 201/PHL 202
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
Surveys the cultural traditions of major civilizations in Africa, Asia, Europe, and the Americas from approximately the seventeenth century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition.
HUMS 215 American Civilization 4
Term Prerequisite: WRIT 121 (ENG/WRIT 122 Recommended)
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This course will explore the cultural foundations of the United States from the period of exploration to the present. This is an interdisciplinary course which examines central themes of American culture and their representation in history, literature, art, philosophy, and religion.

HUMS 220 Japanese Civilization 4
Term Prerequisite: None
Semester Prerequisite: None
This course traces the development of Japan's cultural tradition with strong emphasis on history, religion, art, and literature. Further, this course demonstrates that modern Japan can best be understood in light of its distinctive cultural traditions.

HUMS 230 Seminar: Culture and History of Mexico/Guadalajara 2
Term Prerequisite: None
Semester Prerequisite: None
Seminar designed for those who wish to learn fundamentals of Mexico's culture, history, geography, and society, emphasizing current developments in the city of Guadalajara and various characteristics of Hispanic cultures. Students will learn through readings, informal lectures, audio-visuals, and research/presentations developed by students. Class will be taught in English.

HUMS 260 Seminar: Ancient Egypt 4
Term Prerequisite: None
Semester Prerequisite: None
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 role of religion, kingship, and geography will be studied. Great discoveries and discoveries of Egyptian archaeology will also be featured.

HUMS 265 Seminar: Ethical Issues in Medicine 3
Term Prerequisite: None
Semester Prerequisite: None
This course will present some of the ethical dilemmas which arise in relation to health care and develop a framework for ethical decision-making with which to deal with these and other related problems. It is designed for both health care professionals and others who are interested in these issues.

HUMS 266 Independent Study 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in Humanities. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department.

HUMS 267 Independent Study 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in Humanities. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade-point averages of at least 3.0 in courses offered by this department.

HUSE 100 Introduction to Human Services: Resources and Interventions 4
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of the basic programs and social institutions which provide human services. It provides the student with methods and prob

HUSE 101 Personal Dimensions of Human Services 4
Term Prerequisite: None
Semester Prerequisite: None
This course explores the nature and development of personal dimensions of human services, including knowledge, values, and skills needed by people who are preparing for careers in the helping professions.

HUSE 110 Introduction to Child Abuse, Neglect and Domestice Violence 3
Term Prerequisite: None
Semester Prerequisite: None
This course reviews the history and scope of child abuse, including socioeconomic and psychological factors related to domestic violence. It explores the world of abnormal rearing; roles of community agencies and disciplines; approaches to treatment and coordination of cases and services; and legal aspects and the law.

HUSE 111 Introduction to Mental Health: Prevention and Interventions 3
Term Prerequisite: None
Semester Prerequisite: None
This course presents an overview of the field of mental health with an emphasis on an historical review; psycho-social stages of development; definition of mental illness, causes and treatment; prevention; current service delivery systems; and the role of the Mental Health Associate.

HUSE 112 Introduction to Substance Abuse 3
Term Prerequisite: None
Semester Prerequisite: None
This course reviews substance abuse and use from a historical, sociological, and psychological perspective. It includes drug classifications, street terminology, causes of abuse, and also examines present and past legislation regarding substance abuse and use.

HUSE 182 Understanding AIDS 5
Term Prerequisite: None
Semester Prerequisite: None
This course reviews the important issues surrounding Acquired Immune Deficiency Syndrome (AIDS). It presents opposing viewpoints and factual information, including an overview of the legal, medical, social, and moral aspects of the disease.

HUSE 183 Advocacy Skills: Processes and Applications 5
Term Prerequisite: None
Semester Prerequisite: None
This course describes the advocacy process, focusing upon working with individuals and groups of clients across the age continuum. Participants learn techniques they, as change agents in human services, can use in assessing client needs and in presenting those needs to appropriate agencies at the local, state, and federal levels.

HUSE 211 Family Treatment of Child Abuse, Neglect, Domestic Violence 3
Term Prerequisite: HUSE 110
Semester Prerequisite: HUSE 110
This course addresses the special problems encountered working with abusive and neglective families, using individual groups and family intervention methods. Domestic violence and legal aspects are considered. A secondary focus is worker attraction in the field, its causes, and resolution strategies.

HUSE 240 Substance Abuse: Special Populations and Adolescent Addiction 3
Term Prerequisite: HUSE 229
Semester Prerequisite: HUSE 112
This course surveys substance abuse in various populations including the elderly, women, the hearing impaired, and various ethnic groups. Reasons for abuse and treatment considerations are explored within each special population. The course focuses on issues related to understanding, evaluating, and treating the adolescent substance abuser.

HUSE 241 Substance Abuse Prevention and Intervention 3
Term Prerequisite: HUSE 229
Semester Prerequisite: HUSE 112
This course provides a developmental framework for a better understanding of the factors contributing to substance abuse prevention. It facilitates students' abilities to critique existing programs, identify current community needs, and address the growing demand for consultation and assistance in the field of substance abuse prevention.

HUSE 242 The Chemically Dependent Family 3
Term Prerequisite: HUSE 229
Semester Prerequisite: HUSE 112
This course provides a conceptual framework within which to understand, assess, and effectively intervene/interact in a counseling fashion with the chemically dependent family. Specific sub-groups and issues within or resulting from the chemically dependent family are explored.

HUSE 244 Substance Abuse Agencies, Treatment, Addiction Patterns 3
Term Prerequisite: HUSE 229
Semester Prerequisite: HUSE 112
This course covers the addiction cycle of alcoholics and drug abusers, personali-ty and interactional patterns of addiction, and casework and group work tech-niques. It provides an analysis of current models of treatment within programs, including review of inpatient, outpatient, halfway houses, and occupational programs.
HUSE 270 Native American Leadership I: History and Tradition  
Term Prerequisite: None  
Semester Prerequisite: None  
This course provides an overview of leadership and community development issues in the Great Lakes Native American (Anishinaabe) community from 1600 to present day. It includes cross-cultural leadership theory, community development case studies, problem-solving and decision-making skills development, and utilizes historic Native American leaders as role models.

HUSE 271 Native American Leadership: Skills Development  
Term Prerequisite: None  
Semester Prerequisite: None  
This course presents community development issues facing Native American leaders, especially in Michigan. Focus is on developing analytical, decision-making, and leadership skills for community development. Approach utilizes theoretical and practical case study models and presentations by community leaders.

HUSE 272 Native American Leadership III: Community Service Internship  
Term Prerequisite: HUS 270/HUS 271, Departmental Approval  
Semester Prerequisite: HUSE 270/HUSE 271, Departmental Approval  
This course combines classroom study and field work (four hours per week) to explore community development issues facing today’s Native American leaders. Focus is on developing analytical, decision-making, and leadership skills in an applied setting. Each student has direct interaction with an assigned mentor in a field placement setting.

HUSE 281 Organizational Systems in the Human Services  
Term Prerequisite: HUS 214 Concurrently  
Semester Prerequisite: HUSE 292 Concurrently  
This course provides the student with knowledge of the community power structure, funding bases, and the internal workings of human services organizations. It explores opportunities in the labor force, certification requirements, and approaches to networking.

HUSE 282 Human Services Practicum I: Field Placement  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: Admission to Field Placement, Approval  
This course provides beginning practical experience and training in the field for individual students. The student is placed with a community-based agency. A concurrent seminar, HUSE 281, integrates field experience with theoretical concepts and principles of human services organizational systems.

HUSE 283 Service Delivery Skills  
Term Prerequisite: HUS 215 Concurrently  
Semester Prerequisite: HUSE 284 Concurrently  
This course helps the human services student identify systems and resources to link the systems with the people and how to mobilize the systems and the people.

HUSE 284 Human Services Practicum II: Field Placement  
Term Prerequisite: HUS 214  
Semester Prerequisite: HUSE 282  
This course provides additional practical experience and training in the field of human services. The student works in a community-based agency. A concurrent seminar, HUSE 283, integrates field experience with theoretical principles of human services delivery.

HUSE 297 Human Services Independent Study Project: 1 Credit  
Term Prerequisite: Instructor, Departmental Approval  
Semester Prerequisite: Learning Contract, Departmental Approval  
This course includes special research, directed study, or service-learning projects in human service areas, such as child development, gerontology, social work, substance abuse, or related areas. It requires at least 32 hours of laboratory work or 64 hours of field work for each credit. A learning contract is required.

HUSE 298 Human Services Independent Study Project: 2 Credit  
Term Prerequisite: Instructor, Departmental Approval  
Semester Prerequisite: Learning Contract, Departmental Approval  
This course includes special research, directed study, or service-learning projects in human service areas, such as child development, gerontology, social work, substance abuse, or related areas. It requires at least 32 hours of laboratory work or 64 hours of field work for each credit. A learning contract is required.

HUSE 299 Human Services Independent Study Project: 3 Credit  
Term Prerequisite: Instructor, Departmental Approval  
Semester Prerequisite: Learning Contract, Departmental Approval  
This course includes special research, directed study, or service-learning projects in human service areas, such as child development, gerontology, social work, substance abuse, or related areas. It requires at least 32 hours of laboratory work or 64 hours of field work for each credit. A learning contract is required.

HVAC 100 Fundamentals of Heating, Ventilating and Air Conditioning  
Term Prerequisite: None  
Semester 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. Also covered are exercises in psychrometrics and an introduction to system design.

HVAC 105 Sheet Metal Fabrication and Installation  
Term Prerequisite: None  
Semester Prerequisite: None  
Designed to aid the installer in the skills and techniques for installation of residential heating and cooling systems. Covered will be sheet metal layout, identification of sheet metal fittings, various types of venting, fiberglass and insulated duct, and general furnace installation procedures.

HVAC 110 Applied Electricity I  
Term Prerequisite: None  
Semester 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.

HVAC 111 Applied Electricity II  
Term Prerequisite: HVAC 100  
Semester Prerequisite: HVAC 130 Concurrently  
The study of motors with emphasis on theory, troubleshooting, and servicing. Motor controls, control circuits, protection devices, and discussion of energy conservation as related to motors will be covered in detail.

HVAC 120 Heating I  
Term Prerequisite: HVAC 100, HVAC 101  
Semester Prerequisite: HVAC 100, HVAC 110  
Basic construction and function of components of 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 studies will include humidifiers, air cleaners, and vent dampers.

HVAC 130 Air Conditioning I  
Term Prerequisite: HVAC 100, HVAC 101  
Semester Prerequisite: HVAC 100, HVAC 110  
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.

HVAC 181 Heating, Ventilating and Air Conditioning Seminar  
Term Prerequisite: None  
Semester Prerequisite: None  
Seminar may cover any or all of the following topics: cooling, heating, humidifying, filtering, servicing, and/or ventilating, etc. For individuals already in the Heating, Ventilating, Air Conditioning, and Refrigeration (HVACR) field or anyone interested in these areas.

HVAC 182 Heating, Ventilating and Air Conditioning Seminar  
Term Prerequisite: None  
Semester Prerequisite: None  
Seminar may cover any or all of the following topics: cooling, heating, humidifying, filtering, servicing, and/or ventilating, etc. For individuals already in the Heating, Ventilating, Air Conditioning, and Refrigeration (HVACR) field or anyone interested in these areas.

HVAC 201 Mechanical Code  
Term Prerequisite: HAC 225  
Semester Prerequisite: HVAC 120, HVAC 130/Approval  
A fundamental course designed to acquaint the student with the methods and techniques used in field inspection of mechanical systems. Both the Uniform Mechanical Code and the Building Officials and Code Administrators (BOCA) Code will be discussed.

HVAC 211 Schematics  
Term Prerequisite: HAC 225, HAC 231  
Semester Prerequisite: HVAC 120, HVAC 130  
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.
HVAC 220 Heating II
Term Prerequisite: HAC 225
Semester Prerequisite: HVAC 120
Fundamentals and principles of electronic ignition systems including trouble-shooting and servicing. The major emphasis is placed on high efficiency and condensing furnaces to include: sequence of operation, troubleshooting, servicing, and proper installation.

HVAC 221 Introduction to Hydronics
Term Prerequisite: HAC 225
Semester Prerequisite: HVAC 220
Covers hot water and steam residential heating systems, piping and all accessories, safety controls, expansion tanks, zone valves, installation procedures, and codes. Students perform testing, troubleshooting, adjusting, and servicing of components to insure maximum efficiency.

HVAC 230 Air Conditioning II
Term Prerequisite: HAC 231
Semester Prerequisite: HVAC 130
Advanced air conditioning, light commercial equipment, water cooled units, cooling towers, and wiring both control and line voltage circuitry. The latest in test equipment and meters will aid the student in becoming proficient in servicing and maintenance of commercial equipment.

HVAC 231 Heat Pump
Term Prerequisite: HAC 232
Semester Prerequisite: HVAC 230
This course deals entirely with heat pumps (air-to-air, water-to-air); installation, servicing, and proper application of heat pump components, and extensive wiring schematics.

HVAC 240 Refrigeration I
Term Prerequisite: HAC 231
Semester Prerequisite: HVAC 130
The student will study domestic and light commercial refrigeration systems with an emphasis on controls operation and adjustment.

HVAC 241 Refrigeration II
Term Prerequisite: HAC 210
Semester Prerequisite: HVAC 240
The student will learn servicing of commercial units, heat load calculations for component selections, special valve applications, and piping procedures.

HVAC 250 Pneumatic Control
Term Prerequisite: HAC 225, HAC 231
Semester Prerequisite: HVAC 250/Approval
This course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours.

IDMS 200 Sonographic Introduction
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Introduction to sonography including equipment history, criteria, limitations of ultrasound, and sonographer ethics. General information provided regarding patient preparation, history/clinical correlation, and basic nursing care specific to ultrasound. Strong emphasis on terminology and abbreviations most commonly used with ultrasound.

IDMS 201 Sonographic Anatomy I
Term Prerequisite: Allied Health
Semester Prerequisite: Allied Health
Provides the student with cross-sectional anatomy and pathology as it relates to sonographic scanning of the abdomen, vascular system, thyroid, prostate, scrotum, breast, and neurology of the neonate.

IDMS 202 Sonographic Anatomy II
Term Prerequisite: Allied Health
Semester Prerequisite: Allied Health
Provides the student with cross-sectional anatomy and pathology as it relates to gynecological and obstetrical sonography. Fetal cardiac anatomy and appearance will be presented.

IDMS 219 Sonographic Imaging
Term Prerequisite: Allied Health
Semester Prerequisite: Allied Health
This course will provide the son-to-graduate sonographer with an update of positioning, physics, instrumentation, and interpretation knowledge. In addition, the use of a comprehensive test will assess the student's level of knowledge in sonographic subjects.

IDMS 234 Sonographic Physics
Term Prerequisite: Allied Health
Semester Prerequisite: Allied Health
The student will study the fundamental principles of acoustical physics; how sound is produced and manipulated, and how it reacts in various mediums.

IDMS 245 Sonographic Instrumentation
Term Prerequisite: DMS 234
Semester Prerequisite: IDMS 234
The student will be introduced to the mechanics of A-Mode, M-Mode, Doppler, and Real-time equipment. Accessory equipment such as the camera, transducer, and cathode ray tube will be presented. Methods of quality assurance will also be presented.

IDMS 265 Sonographic Interpretation I
Term Prerequisite: Allied Health
Semester Prerequisite: Allied Health
The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the abdomen, vascular system, and small parts.

IDMS 266 Sonographic Interpretation II
Term Prerequisite: Allied Health
Semester Prerequisite: Allied Health
The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the obstetric and gynecologic patient.

IDMS 280 Introduction to Clinical Experience I
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
First course in a three-semester sequence of clinical application in diagnostic medical sonography. The course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours.

IDMS 281 Clinical Experience II
Term Prerequisite: DMS 280
Semester Prerequisite: IDMS 280
Building on material presented in IDMS 280, this is the second course in a three-semester sequence in diagnostic medical sonography. The course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours.

IDMS 282 Clinical Experience III
Term Prerequisite: DMS 281
Semester Prerequisite: IDMS 281
Based on material presented in IDMS 280, this is the third course in a three-semester sequence of clinical application in diagnostic medical sonography. Course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours.

IMAG 101 Basic Photography for Non-Majors
Term Prerequisite: None
Semester Prerequisite: None
Students will learn to use camera controls, exposure controls, photographic composition, and lighting to make better photographs. Color film and commercial processing will be used. Designed for students with little or no previous still photography experience who do not plan to major in Imaging Technology.

IMAG 102 Advanced Photo for Non-Majors
Term Prerequisite: PHO 110/Equivalent
Semester Prerequisite: IMAG 101/Equivalent
A continuation of IMAG 101. Students will learn to apply advanced design concepts, techniques, and accessories for problem-solving and creative image making. Color film and commercial processing will be used. For students who do not plan to major in Imaging Technology.

IMAG 103 Basic Film Production for Non-Majors
Term Prerequisite: None
Semester Prerequisite: None
Introduces storytelling using sound and picture. Students plan and produce short programs, developing basic skills in plot structure, staging scenes, camera, sound, and editing. For students with little or no previous film experience and who do not plan to major in Imaging Technology.

IMAG 105 Color Printing for Non-Majors
Term Prerequisite: PHO 111
Semester Prerequisite: IMAG 105/Departmental Approval
A basic color printing course designed for students who do not plan to major in Imaging Technology. Emphasis will be on exposure controls of negative color films and the production of quality color prints from both negatives and slides.

IMAG 111 Introduction to Photographic Technology I
Term Prerequisite: None
Semester Prerequisite: None
Introduces students to photographic technology on both a theoretical and practical level. The student will learn camera types and related equipment, exposure controls, beginning and intermediate black-and-white film processing and printing, including contrast controls. This course is the first of a two-course sequence for Imaging Technology majors.
IMAG 112 Design Fundamentals for Imaging Technologies 3
Term Prerequisite: PHO 110/PHO 120
Semester Prerequisite: Concurrently IMAG 101/111, Departmental Approval
This course introduces students to design theory and its application to imaging technologies on both a practical and theoretical level. Students will learn and apply design elements and principles to their evolving work.

IMAG 113 Lighting Concepts and Applications 3
Term Prerequisite: PHO 120
Semester Prerequisite: IMAG 111/Concurrently, Departmental Approval
Introduces the student to fundamental lighting concepts encountered in the studio and on location. Students will learn to apply their knowledge by identifying and solving common photographic lighting problems. Students will use professional continuous and electronic flash equipment to produce acceptable images.

IMAG 114 Introduction to Photographic Color Technology 3
Term Prerequisite: PHO 128, PHO 140, PHO 154
Semester Prerequisite: IMAG 112, IMAG 113, Departmental Approval
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.

IMAG 117 Introduction to Photographic Technology II 4
Term Prerequisite: PHO 128, PHO 140, PHO 154
Semester Prerequisite: IMAG 112, IMAG 113, Departmental Approval
Continuation of IMAG 111. Students will learn intermediate and advanced black-and-white exposure, developing, and printing controls and techniques. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Successful completion required for continuation in the Imaging Technology Program (Still Track) at the 200 level.

IMAG 118 Film and Multi-Media Technology I 4
Term Prerequisite: PHO 128, PHO 140, PHO 154
Semester Prerequisite: IMAG 112, IMAG 113, Departmental Approval
Introduces story telling practices using sound and pictures. Students will learn to plus shots, techniques, developing basic skills in: plot structure, stage acting, photography, sound recording, editing, and audience evaluation. Successful completion required for continuation in the Imaging Technology Program (Film/Multi-Media Track) at the 200 level.

IMAG 120 Photographic Technology Lab 3
Term Prerequisite: PHO 180, Departmental Approval
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for students whose lack of photographic competencies prevent their continuation in the Imaging Technology Program above the 100 level. Individualized learning objectives are formulated for each student. Successful completion of these objectives will allow the student to continue into the 200 level course sequence.

IMAG 121 Imaging Technology Forum 2
Term Prerequisite: None
Semester Prerequisite: None
A survey of the imaging technology field, including the role of the imaging professional, materials, processes, and new technology as related to advertising, communications, film/multi-media, illustration, portrait, and self-expression. Includes an overview of projected employment opportunities in imaging technology.

IMAG 122 Imaging Technology Workshop 2
Term Prerequisite: PHO 140
Semester Prerequisite: IMAG 111, Departmental Approval
A continuing study of the imaging technology field. Students will learn through demonstration, laboratory experiences, and other direct involvement in imaging technologies. Includes presentations, demonstrations and workshops that expose students to the current state of development in the areas of hybrid imaging and emerging technologies.

IMAG 201 Professional Seminar: Commercial Photography 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval
Introduces the student to the contemporary materials and procedures of the negative to positive color photographic print process. Students will learn to produce professionally acceptable prints from a wide variety of color negatives by applying color balancing and printing controls, print finishing techniques, and lab efficiency skills to their work.

IMAG 202 Professional Seminar: Photographic Communication 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and explore areas of interest using still photography in combination with words. Emphasis on communicating clear messages to mass media audiences through documentary photography, newspaper and magazine photojournalism, and public relations photography.

IMAG 203 Professional Seminar: Film/Multi-Media 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, Departmental Approval
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval
Provides students with basic photographic skills, an opportunity for intensive study in selected aspects of motion picture production, or multi-media production.

IMAG 204 Professional Seminar: Imaging for Self-Expression 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
An exploration of self-expression through various imaging technology-based tools, processes, and thought. Students will create process-based images and will research, discuss, critique, formulate opinions, and establish personal goals in order to better understand and practice personal style and expression.

IMAG 205 Professional Seminar: Hybrid Imaging 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and explore the areas of emerging hybrid imaging tools and techniques.

IMAG 206 Professional Seminar: Output Technologies 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and knowledge in the area of currently available image output technologies.

IMAG 207 Professional Seminar: Imaging Issues 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
An exploration of historical, ethical and aesthetic issues relating to imaging technology. Intended to help students better understand, appreciate, and make aesthetic judgments about historical, contemporary, and future imaging technology issues.

IMAG 208 Professional Seminar: Input Technologies 3
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and knowledge in the areas of currently available image input and creation technologies.

IMAG 220 Intermediate Still Imaging Technology 4
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval
Introduces the still imaging student to various imaging technologies and their diverse applications. Students will study the historical, contemporary, and future directed concepts that encompass each of the program's areas of emphasis. Application of these concepts will enable students to develop an awareness of their personal interests and directions.

IMAG 221 Advanced Still Imaging Technology 4
Term Prerequisite: Departmental Approval
Semester Prerequisite: IMAG 220, Departmental Approval
A continuation of IMAG 220 for the advanced still photography student to help define the student's major area of study. Students, individually and as team members, will apply critical thinking processes and appropriate imaging technologies to produce sophisticated images that illustrate their specialties, interest, and intended direction for future studies.

IMAG 222 Intermediate Color Applications and Technology 3
Term Prerequisite: PHO 160, PHO 200
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval
Introduces the student to the contemporary materials and procedures of the negative to positive color photographic print process. Students will learn to produce professionally acceptable prints from a wide variety of color negatives by applying color balancing and printing controls, print finishing techniques, and lab efficiency skills to their work.
IMAG 223 Advanced Color Applications and Technology 4
Term Prerequisite: PHO 202, PHO 204, PHO 220, PHO 240
Semester Prerequisite: IMAG 222, Departmental Approval
A continuation of IMAG 222 that involves the advanced student with color as a critical communication tool. Students, individually and as team members, will learn to produce highly effective and professionally acceptable photographs with color transparency film. A high level of technical accomplishment and aesthetic development will be reached.

IMAG 224 Emerging Image Technologies I 2
Term Prerequisite: PHO 128, PHO 154, PHO 160, PHO 200
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
An intermediate level course designed to expose imaging technology majors to the latest technological innovations affecting the areas of photography, imaging and related fields. Course format will include lectures, discussions, demonstration, and hands-on experiences.

IMAG 225 Emerging Image Technologies II 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: IMAG 224, Departmental Approval
An advanced level study that further explores the effects of new technologies and processes on the areas of photography, imaging. Students will attend a three-day program that includes lectures, demonstrations and workshops related to hybrid imaging and emerging technologies.

IMAG 226 Intermediate Film and Multi-Media Technology II 4
Term Prerequisite: PHO 126, PHO 128, PHO 146/PHO 154, PHO 200
Semester Prerequisite: IMAG 114, IMAG 118, Departmental Approval
An intermediate level course that exposes the student to advanced storytelling practices using sound and image. Hands-on production exercises help the student to develop skills in scripting, storyboarding, production planning, photography, image making, editing, and sound track production.

IMAG 227 Advanced Film and Multi-Media Technology III 4
Term Prerequisite: PHO 136
Semester Prerequisite: IMAG 226, Departmental Approval
A continuation of IMAG 226 for moving image majors. Students learn advanced sound and visual production skills, editing techniques, and post-production procedures. Students work individually and as group members and apply critical thinking and problem-solving processes to produce creative, dramatic, and effective communications programs.

IMAG 228 Independent Study 3
Term Prerequisite: PHO 201, PHO 202, PHO 204, PHO 220/Departmental Approval
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to pursue study in areas not formally taught within the curriculum. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration.

IMAG 229 Advanced Imaging Applications 3
Term Prerequisite: PHO 201, PHO 202, PHO 204, PHO 200/Departmental Approval
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work on improving skills or to enhance skills in an area of strength or interest. Students will work with an instructor in a directed learning experience and share work with other students also enrolled. Acceptable written proposal required prior to registration.

IMAG 230 Imaging Technology Major I 3
Term Prerequisite: PHO 201, PHO 202, PHO 204, PHO 220/PHO 136, PHO 166
Semester Prerequisite: IMAG 221, 223, 225, 227, Departmental Approval
An advanced level major concentration course, the first of a two-course sequence. Students will create images that are professionally acceptable visual solutions to problems typical of their chosen field. Emphasis is on critical thinking, problem-solving, and refining technical, aesthetic, and communication skills.

IMAG 231 Imaging Technology Major II 3
Term Prerequisite: PHO 221/PHO 222/PHO 244/PHO 245/PHO 246/PHO 216
Semester Prerequisite: IMAG 230, Departmental Approval
A continuation of IMAG 230. Continued emphasis on problem-solving, critical thinking, and refining technical, aesthetic, and communication skills. Students will create professional quality images that may be included in the portfolio which is required for completion of the Imaging Technology Program.

IMAG 232 Internship 8
Term Prerequisite: PHO 210, PHO 202, PHO 204, PHO 220/Departmental Approval
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work as an intern developing competencies in the technical, business, creative, and communicative aspects of photography, filmmaking, or electronic imaging. Acceptable written application and internship agreement required prior to registration.

IMAG 233 The Business of Photography: Practices and Directions 3
Term Prerequisite: PHO 201, PHO 202, PHO 204, PHO 220/PHO 136, PHO 166, Departmental Approval
Semester Prerequisite: IMAG 221, 223, 225, 227, Departmental Approval
Exposes the student to the general business practices and approaches used in the photographic marketplace. The student will learn to undertake market research, develop a marketing plan, understand and apply basic accounting and tax principles, prepare a business plan, and determine where their specialties and interests fit within the industry.

IMAG 234 Portfolio Assembly and Degree Completion Activities 3
Term Prerequisite: All Required Photo, General Education Degree Requires Completed Prior to Enrollment
Semester Prerequisite: IMAG 233, IMAG 231/Concurrently, Portfolio Review, Departmental Approval
Finalizes the student's portfolio and immediate career plans. Students learn to edit and assemble their best work into a cohesive, visual resume for the purpose of securing employment in their chosen major emphasis area; or for gaining acceptance to another institution for continued studies. Restricted enrollment via a portfolio review.

IMRI 200 Introduction to Magnetic Resonance Imaging 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course is designed as an overview of basic patient care principles and to prepare the student to meet a variety of emergency situations encountered in the Magnetic Resonance Imaging Department.

IMRI 202 Computers and Imaging Technology 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Using the IBM-PC in the lab, students are given a basic understanding of the computers and software applicable to imaging technology departments and facilities. DOS, database, word processing, and health software will be used.

IMRI 208 Cross Sectional Anatomy for Imaging 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Course is designed to present an in-depth overview of anatomy (anatomical structures) generally presented in radiography programs. The course presents gross anatomy with a cross-sectional anatomical application.

IMRI 211 MRI Application I 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Integration of anatomy-pathology-physics principles to MRI: application of basic anatomy to cross-sectional aspects of imaging; and use of MRI as a diagnostic tool.

IMRI 212 MRI Application II 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Integration of anatomy-pathology-physics principles in MRI: application of basic anatomy to cross-sectional aspects of imaging; and use of MRI as a diagnostic tool. Utilizing the information presented in MRI 211, the student will be presented with more complex anatomy and pathology.

IMRI 221 MRI Principles I 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Application of principles of physics to the generation of a magnetic resonance image. Integrates computer application to the magnetic resonance image formation.

IMRI 222 MRI Principles II 3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Application of principles of physics to generation of a magnetic resonance image. Integrates computer application to magnetic resonance image formation.

IMRI 223 Directed Readings/Research MRI 2
Term Prerequisite: Program
Semester Prerequisite: Admission to Program
An independent study/research course in which students identify a specific interest area in MRI. Participants develop an understanding of MRI through directed readings and research projects; areas of exploration and development are presented throughout the term during scheduled sessions.
IMRI 231 MRI Physics  
Term Prerequisite: Admission to Program  
Semester Prerequisite: Admission to Program  
This course is designed to present the basic physics of Magnetic Resonance Imaging. An overview of physics is presented with information and application to MRI.

IMRI 270 Spectroscopy  
Term Prerequisite: Admission to Program  
Semester Prerequisite: Admission to Program  
Presents a basic overview of spectroscopy and its application to MRI. Designed to provide the student with an understanding of the principles of spectroscopy and its use as an aid to diagnosis of specific pathologic conditions.

IMRI 281 MRI Clinical Experience I  
Term Prerequisite: Admission to Program  
Semester Prerequisite: Admission to Program  
First in a two-semester sequence of clinical application in MRI, designed to present the student with an environment of combined cognitive, psychomotor, and affective aspects of the profession. The course is programmed with specific performance activities. Credit is arranged for each term with a ratio of one credit hour to each two clinical clock hours.

IMRI 282 MRI Clinical Experience II  
Term Prerequisite: Admission to Program  
Semester Prerequisite: Admission to Program  
Second in a two-semester sequence of clinical application in MRI, designed to present the student with an environment of combining cognitive, psychomotor, and affective aspects of the profession. The course is programmed with specific performance activities. Credit is arranged for each term with a ratio of one credit hour to each two clinical clock hours.

INAU 100 Introduction to Industrial Automation  
Term Prerequisite: None  
Semester Prerequisite: None  
This course provides a hands-on introduction to current manufacturing technology. Students will learn to use MS/PC DOS computer including word processor, spreadsheet, and operating system applications. Students will experience the use of industrial robots, programmable logic controllers, machine vision, computer-aided design, discrete electronic components, and statistical process control.

INAU 110 Principles of Industrial Automation  
Term Prerequisite: CIM 100  
Semester Prerequisite: INAU 100, TECH 101  
Course provides basics of fluid power, motor drives, electronics, digital logic, computer architecture, position sensing, and servo control. Topics are accompanied by lab exercises to provide practical experience in the application of these basics.

INAU 135 Fiber-Optic Communications  
Term Prerequisite: IA 135, MTH 102, TEC 152  
Semester Prerequisite: TECH 102  
A course in the principles and application of fiber-optic communications. Topics covered are particle and wave theory, optics, fiber construction, coupling principles, light resources, and light sensors. Students will learn terminology, use of field test equipment, and troubleshooting methods.

INAU 150 Introduction to the OS/2 Operating System  
Term Prerequisite: None  
Semester Prerequisite: None  
Course provides an introduction to the multitasking operating system OS/2. Students learn the basics of what multitasking is and what it can do, as well as system requirements, installation, configuration, and operation of standard utilities.

INAU 151 Pascal Programming for Manufacturing  
Term Prerequisite: None  
Semester Prerequisite: None  
An introductory course in computer programming that provides students with experience and a programming library to meet the basic needs of the manufacturing environment. Subjects include program planning, basic Pascal structure, operator interface, disk files, post processors, printer codes, and RS 232C communications.

INAU 200 Applied Automation  
Term Prerequisite: IA 101, IA 103  
Semester Prerequisite: INAU 110  
Course provides experience in the operation, programming, and setup of automated industrial equipment, including robots, vision equipment, and industrial software.

INAU 210 Industrial System Integration  
Term Prerequisite: IA 103, IA 151  
Semester Prerequisite: INAU 200, INAU 151, TECH 102, ELTE 122  
Course provides experience in both the physical interconnection and software integration of intelligent industrial equipment. Students work with a manufacturing work cell and integrate current components as well as future components.

INST 201 Practicum for Science Teachers I  
Term Prerequisite: IST 211  
Semester Prerequisite: INST 211 Concurrently  
Provides the student an opportunity to observe and participate in science instruction related to INST 211 in an elementary school classroom. Participants will prepare and present hands-on, classroom-ready science activities to elementary students.

INST 202 Practicum for Science Teachers II  
Term Prerequisite: IST 212  
Semester Prerequisite: INST 212 Concurrently  
Provides the student an opportunity to observe and participate in science instruction related to INST 212 in an elementary school classroom. Participants will prepare and present hands-on, classroom-ready science activities to elementary students.

INST 211 Integrated Science for Teachers I  
Term Prerequisite: NSCI 122  
Semester Prerequisite: NSCI 122  
Primarily for students planning an elementary education career. Emphasizes developing classroom activities, demonstrations, science discovery projects, and experimental equipment that would be useful in an elementary classroom. Laboratory and field experiences involve students with natural phenomena, including their relationship and application to principles studied, with focus on the fall season.

INST 212 Integrated Science for Teachers II  
Term Prerequisite: IST 211  
Semester Prerequisite: INST 211  
Primarily for students planning an elementary education career. Emphasizes developing classroom activities, demonstrations, science discovery projects, and experimental equipment that would be useful in an elementary classroom. Laboratory and field experiences involve students with natural phenomena, including their relationship and application to principles studied, with focus on the spring season.

INSU 265 Principles of Risk and Insurance  
Term Prerequisite: None  
Semester Prerequisite: None  
At the completion of this course, the student will have a working knowledge of the theory of risk, insurance terminology, legal insurance contracts, and use of risk management.

INTR 106 Lettering For Designers  
Term Prerequisite: None  
Semester Prerequisite: None  
This course covers theory and application of lettering for designers with an emphasis on small-scale, free-hand pencil lettering.

INTR 110 Applied Design (2D/Color)  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is an introduction to visual design for students who want to become professional designers. It includes basic elements and principles of 2-D design, color and 3-D design. Its holistic and practical approach to design will complement all disciplines.

INTR 111 Applied Arts 3-D  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will be a studio introduction to the materials and creation of crafts used in interiors: textiles, clay, and metals.

INTR 114 Design Process  
Term Prerequisite: None  
Semester Prerequisite: None  
This is a foundation course exploring the theory and applications of Interior Architecture/Design. Emphasis is on developing the creative problem-solving process through graphic written and verbal formats.

INTR 132 Presentation Techniques  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: INTR 110  
This course is the study of visual and verbal presentation techniques. The emphasis will be on production sample boards.
INTR 134  Design Portfolio
Term Prerequisite: Departmental Approval
Semester Prerequisite: INTR 132
This course is an opportunity for students to organize photographs, mate/term, and display their visual works. At the completion of the course, the students will have developed a format for a portfolio.

INTR 140  Interior Drafting and Detailing
Term Prerequisite: Departmental Approval
Semester Prerequisite: INTR 106
Study of cabinetry and furniture detailing and construction. Emphasis on development of shop drawings and furniture manufacturing methods.

INTR 151  Kitchen and Bath Design
Term Prerequisite: Departmental Approval
Semester Prerequisite: INTR 101, Recommended
This course investigates basic kitchen and bath planning, design, and remodeling through lecture, discussion, and recitation.

INTR 152  Kitchen/Bath Planning Workshop
Term Prerequisite: None
Semester Prerequisite: None
Basic awareness of kitchen and bath planning, designing, and remodeling developed through lecture, discussion, and recitation.

INTR 154  Antiques and Collectibles
Term Prerequisite: None
Semester Prerequisite: None
The student will learn to recognize, date, and evaluate antiques and collectibles from the basis of materials, methods of construction, styles, and periods.

INTR 156  Interior Decorating for the Home
Term Prerequisite: None
Semester Prerequisite: None
This course is a survey of interior decorations on a practical level. Emphasis is on residential furnishing and treatments. Field trips to local market resources for furniture, fixtures, furnishings, and finishes are included.

INTR 162  Materials for Interiors
Term Prerequisite: IAD 131
Semester Prerequisite: INTR 110
Study of non-structural interior finishes and materials, their methods of application, and installation. Emphasis will be on the knowledge of properties of wood, tiles, carpeting, etc.

INTR 170  Introduction to Interiors
Term Prerequisite: Departmental Approval
Semester Prerequisite: INTR 110
Introduction to the profession of interior design and survey of design, elements, and theory. Principles and elements of design are used to communicate solutions to environmental interior problems. Design vocabulary, principles, and elements of design in a composition, such as planning of various space and wall elevations will be included.

INTR 178  Residential Interiors
Term Prerequisite: IAD 133
Semester Prerequisite: INTR 132/INTR 170
This course examines the relationship of human needs to interior environmental design with emphasis on alternative housing design.

INTR 200  Introduction to Housing
Term Prerequisite: None
Semester Prerequisite: None
This course will explore through lecture/discussion and sketching the planning and design of the American Housing Industry from past to present. The impact of government, finance, zoning ordinances, codes, aesthetics, construction technology, demographics, energy, and society will be studied. (Recommended for all majors.)

INTR 202  Affordable Housing
Term Prerequisite: None
Semester Prerequisite: None
This course is a comprehensive study which includes familiar topics of conventional "affordable" (finance programs, community aids, etc.) and also the less-studied realities of design, products, standards, market, and operative expectations, in which total improvement of affordability could take place.

INTR 204  Affordable Housing Workshop
Term Prerequisite: None
Semester Prerequisite: None
This course is a comprehensive study of changes possible within the American economic system for more sustained production of low and moderate cost housing.

INTR 222  AutoCAD for Interiors
Term Prerequisite: Departmental Approval
Semester Prerequisite: INTR 140/Equivalent
This course offers computer-aided planning and design using AutoCAD software. Emphasis on contract furniture systems and space planning.

INTR 230  World Decorative Arts I
Term Prerequisite: None
Semester Prerequisite: None
This course is a survey of the history of decorative art periods, including furniture, interior textiles, and accessories. Covers periods from ancient up to the 19th century industrial revolution.

INTR 231  World Decorative Arts II
Term Prerequisite: IAD 238
Semester Prerequisite: INTR 220
This course is a survey of the history of the decorative art periods including furniture, interior textiles, and accessories, covering periods for the 19th century industrial revolution to post-modern periods with an examination of preservation principles.

INTR 232  Twentieth Century Design
Term Prerequisite: None
Semester Prerequisite: None
This course is a survey of twentieth century design applying to styles of furniture, accessories, textiles, and products as originated by signature designers, artists, and architects.

INTR 240  Color/Lighting
Term Prerequisite: IAD 132
Semester Prerequisite: INTR 110
This course introduces color and light as a design element for residential and commercial applications. Emphasis is on color systems, value studies, and lighting overlays.

INTR 241  Service Learning
Term Prerequisite: Departmental Approval
Semester Prerequisite: Instructor Approval-2nd Year Standing
This course allows students to participate in community service/volunteer projects, which includes outdoor education and all forms of active learning, such as habitat for humanity.

INTR 242  Home Furnishing Merchandising
Term Prerequisite: IAD 150
Semester Prerequisite: INTR 110
This course examines specific home furnishings and products used in the current interiors industry. Emphasis is on furniture manufacturing and merchandising practices in department stores and showrooms.

INTR 244  Visual Display
Term Prerequisite: None
Semester Prerequisite: None
This course covers the development of display fundamentals in color, lighting, design and materials for store windows, showrooms, and exhibits.

INTR 248  Contract Interiors
Term Prerequisite: IAD 231
Semester Prerequisite: INTR 178
This course emphasizes contract office design. This includes designing commercial interiors, integrating client's needs, and the socio-psychological aspects of the environment, using computer-aided planning programs.

INTR 252  Construction Documents and Specifications
Term Prerequisite: Departmental Approval
Semester Prerequisite: INTR 142
This course is the study of practices and procedures of working drawings, interior materials, cost estimating, installation methods for furniture, cabinets, floor coverings, wall coverings, and window treatments. Emphasis on commercial specifications.

INTR 254  Interior Design Certification Review
Term Prerequisite: 2 Years Practical Experience
Semester Prerequisite: Majors Only
This course is specifically intended to provide Interior Design students with appropriate information plus practical exercises which will enable them to prepare for the National Council for Interior Design Qualification Examination.

INTR 256  Interior Practice Management
Term Prerequisite: Departmental Approval
Semester Prerequisite: 2nd Year Majors Only
This course is an in-depth study of the business and professional practices of interior designers. Emphasis on certification, contracts, marketing, ethics, and project management.
INTR 258 Workroom Practices

Term Prerequisite: None
Semester Prerequisite: None
In this course, the student will study trade workroom materials, methods for commercial and residential window treatments, upholstery, bedspreads, etc., and the detailing used to enable the designer to communicate the design concepts to the workroom. Estimating included.

INTR 260 Interior Computer Project Laboratory

Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is the direct study of special projects not incorporated in regular course offerings through use of CAD applications.

INTR 262 Design Project Laboratory

Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This course is a directed study of special projects not incorporated in regular course offerings.

INTR 296 Pre-Professional Internship

Term Prerequisite: Instructor Approval 2.5 GPA Major E44 Only
Semester Prerequisite: Instructor Approval 2.5 GPA Completed First Year Courses
This course is a field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional architect or interior designer. Regular scheduled progress reports will be given and discussed with supervising faculty member.

IPFL 121 Japanese Language and Culture Summer Institute

Term Prerequisite: None
Semester Prerequisite: None
This is an intensive Japanese course designed to provide students who have little or no knowledge of Japanese language basic information about Japanese language and culture. Listening comprehension and oral proficiency will be emphasized. Students will also learn hiragana, katakana, and some kanji (Chinese characters).

IPFT 211 Study Tour: China

Term Prerequisite: None
Semester Prerequisite: None
Designed to provide students with the opportunity to experience the Chinese culture. Through the course activities, lectures, and field trips, students will have a better understanding of Chinese culture, its civilization, and features of the contemporary daily life of the people. Cities of historical and current importance will be visited.

IRAD 105 Introduction Radiation Therapy

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole.

IRAD 106 Oncology Principles Patient Care

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Provides the student with the basic concepts of diagnostic process, pathophysiology, oncologic problems, oncologic emergencies, chemotherapy protocols, agents and side effects, bereavement, psychological aspects of disease, and specific case studies.

IRAD 204 Principles Oncology I

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course will provide the student with a review of anatomy and physiology, medical terminology related to oncology patients, and examination of attitudes toward dying, death, and cancer patients.

IRAD 205 Principles Oncology II

Term Prerequisite: Departmental Approval
Semester Prerequisite: IRAD 204
Provides the student with the fundamentals of clinical radiation oncology. Malignant conditions, their etiology, and methods of treatment are discussed. Attention is given to patient prognosis, treatment results, and the effects of combined therapies.

IRAD 219 Clinical Radiation Oncology I

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
The student will identify malignant conditions, epidemiology, treatment methods, radiobiological effects, and treatment considerations for general anatomical sites, such as head and neck, pelvic, etc.

IRAD 220 Clinical Radiation Oncology II

Term Prerequisite: Departmental Approval
Semester Prerequisite: IRAD 219
The student will identify malignant conditions, epidemiology, treatment methods, radiobiological effects, as well as treatment planning for specific anatomical sites, such as ovary, breast, etc.

IRAD 231 Radiation Therapy Physics

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Provides the student with specifics of ionizing radiation and principles of radioactivity. Details of production, interactions, and types of radiation, as well as medical uses of radioactive material and technical considerations of application are discussed.

IRAD 232 Advanced Therapy Physics

Term Prerequisite: RAD 231
Semester Prerequisite: IRAD 231
Provides the student with the specifics of ionizing radiation and the principles of radioactivity. Details of production, interactions, and types of radiation, medical uses of radioactive material, and technical considerations, as well as the application to the treatment of patients are discussed.

IRAD 234 Quality Assurance in Radiation Therapy

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Upon completion of this course, the student will be able to discuss and identify the optimal parameters for a functioning radiation oncology department in line with the requirements of the J.C.A.H. standards in essential areas.

IRAD 235 Basic Dosimetry

Term Prerequisite: College Algebra
Semester Prerequisite: MATH 126/Placement Test
Provides the student with the basic concepts of clinical dosimetry and treatment planning. Various external beam techniques, depth dose data, and summation of simple isodose curves are discussed. Fundamental procedures in dose measurement and verification are included.

IRAD 270 Radiobiology

Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Provides the student with the principles of cell response to radiation. Factors which influence the effects of radiation, tissue sensitivity, and environmental factors are discussed.

IRAD 285 Clinical Experience I

Term Prerequisite: Admission to Program
Semester Prerequisite: IRAD 285
Second course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession.

IRAD 286 Clinical Experience II

Term Prerequisite: RAD 285
Semester Prerequisite: IRAD 285
Second course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession.

IRAD 287 Clinical Experience III

Term Prerequisite: RAD 286
Semester Prerequisite: IRAD 286
Third course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession.

IRAD 288 Clinical Experience IV

Term Prerequisite: RAD 287
Semester Prerequisite: IRAD 287
Fourth course in a sequence of clinical applications in radiation therapy technology. This course covers all phases of radiation therapy technology and is designed to present the student with an environment combining cognitive, psychomotor, and affective aspects of the radiation therapy profession.

IRAD 289 Advanced Clinical Skills I

Term Prerequisite: Departmental Approval
Semester Prerequisite: Admission to Program, IRAD 288
First in a series of two courses designed to provide opportunity to explore advanced concepts in radiation therapy and oncology. Course includes competency-based evaluation combined with cognitive, psychomotor, and affective aspects of the radiation therapy profession.
IRAD 290 Advanced Clinical Skills II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Admission to Program, IRAD 289
Second in a series of two courses designed to provide opportunity to explore advanced concepts in radiation therapy and oncology. Course includes competency-based education combined with cognitive, psychomotor, and affective aspects of the profession performed at the level of a staff radiation therapist.

IRX 100 Introduction to Imaging
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Survey of the role of the radiographer in the health-care industry. Explores the historical development of x-ray, medical, and legal ethics, radiation protection, patient-staff relationships, and other imaging technologies. A clinical component allows the new radiography student to correlate this material in the practical setting.

IRX 111 Radiographic Positioning I
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Student radiographers are introduced to radiographic positioning of the upper and lower extremity, chest, abdomen, bony thorax, pelvis, and spine. Associated topographic, skeletal, chest, and abdominal anatomy is studied. A laboratory experience is provided to evaluate the student skills in performing each position/projection.

IRX 112 Radiographic Positioning II
Term Prerequisite: IRX 100, IRX 111, AHC 104
Semester Prerequisite: IRX 100, IRX 111, 2.5 Minimum in AHC 104
A continued study of routine radiographic positioning with the addition of fluoroscopic procedures. Included are studies of the skull, G.I. tract, G.U. tract, myelography, and bronchography. In addition, various contrast media are studied. Laboratory experiences are provided to evaluate student skills in performing selected position/projections.

IRX 113 Radiologic Positioning III
Term Prerequisite: IRX 112
Semester Prerequisite: 2.5 Minimum in IRX 112
Special radiologic procedures are studied and some related imaging modalities surveyed. Procedures include neurologic, cardiovascular, arthographic, mammographic, digital imaging, and tomographic studies. Special equipment used in these examinations are surveyed: needles, catheters, high pressure injectors, film changers, sterile trays, and contrast media.

IRX 114 Cross-Sectional Anatomy
Term Prerequisite: IRX 113/Departmental Approval
Semester Prerequisite: IRX 113/Departmental Approval
Provides an overview of cranial, spinal, and sagittal cross-sectional anatomy of the human body. Special emphasis will be placed on the brain, thorax, and abdominal areas. Correlations between cross-sectional anatomy, radiographs, and three-dimensional drawings will be explored.

IRX 121 Radiographic Exposure I
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
The formation of the radiographic image is the focus of IRX 121. Photographic and geometric variables are related to radiographic factors affecting these interactions compared and contrasted. Finally, a study of the history of radiology, basics of radiation formation, and anatomy of the x-ray tube is discussed.

IRX 122 Radiographic Exposure II
Term Prerequisite: IRX 121
Semester Prerequisite: 2.5 Minimum in IRX 121
Various beam modifying devices are presented and their relation to formation of a radiographic image studied. Includes a study of manual and automatic processing and the theory of image formation. Finally, darkroom procedures, quality control, both radiographic and photographic are studied.

IRX 123 Radiographic Independent Study I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Opportunity to prepare and submit a formal research paper. May include patient care, positioning, physics, exposure and quality, special procedures, radiobiology, quality control, x-ray pathology. Involves library research, laboratory experiments, questionnaires, use of audiovisual lab, and/or a combination. Biweekly meetings required to assess progress.

IRX 124 Radiographic Independent Study II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Opportunity to prepare and submit a formal research paper. May include patient care, positioning, physics, exposure and quality, special procedures, radiobiology, quality control, x-ray pathology, involves library research, laboratory experiments, questionnaires, use of audiovisual lab, and/or a combination. Biweekly meetings required to assess progress.

IRX 131 Radiologic Physics
Term Prerequisite: MTH 102/Equivalent
Semester Prerequisite: MATH 112/Equivalent
Basic physical principles are related to the radiologic process. A study of basic electricity and the operation of the x-ray circuit is presented. Finally, advanced topics regarding the formation of radiation, protection of the x-ray tube, and x-ray attenuation are studied.

IRX 132 Radiobiology and Protection
Term Prerequisite: IRX 131
Semester Prerequisite: IRX 131/Departmental Approval
A focus on the reasons for good radiation hygiene and methods to implement protection of the patient and technologist. Current theories regarding the physiological effects of x-radiation are explored.

IRX 160 Radiologic Emergencies
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course is designed to prepare the student to meet a variety of emergency situations encountered in the radiology department. The theory provided will enable the student to recognize when an emergency exists, assess the situation, and develop a plan for immediate action.

IRX 200 Introduction to Radiologic Pathology
Term Prerequisite: AHC 106
Semester Prerequisite: AHC 106
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 discussed, with an attempt to relate more recent advances in these areas.

IRX 210 Radiographic Department Management
Term Prerequisite: Admission to Program/Departmental Approval
Semester Prerequisite: Admission to Program/Departmental Approval
Designed to acquaint the student with the organization, function, supervision, and financial arrangements relative to departments of radiology: basic x-ray equipment for performing preventive maintenance and detecting simple functioning difficulties.

IRX 212 Clinical Practice I
Term Prerequisite: IRX 100, IRX 111, AHC 104
Semester Prerequisite: IRX 100, IRX 111, IRX 121, AHC 104
First in a three-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio.

IRX 213 Clinical Practice II
Term Prerequisite: IRX 212
Semester Prerequisite: IRX 212
Second course in a two-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio.

IRX 214 Comprehensive Experience I
Term Prerequisite: IRX 213
Semester Prerequisite: IRX 213
First in a three-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio.

IRX 215 Comprehensive Experience II
Term Prerequisite: IRX 214
Semester Prerequisite: IRX 214
Second in a three-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio.

IRX 216 Comprehensive Experience III
Term Prerequisite: IRX 215
Semester Prerequisite: IRX 215
Third in a three-semester sequence of clinical applications in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio.

IRX 219 Imaging Update
Term Prerequisite: Allied Health Professional
Semester Prerequisite: Allied Health Professional
This course will provide the advanced imaging student with an update of positioning, exposure, and physics. In addition, the use of a comprehensive test will assess the student's level of knowledge in the imaging technology.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term Prerequisite</th>
<th>Semester Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPN 101</td>
<td>Elementary Japanese I</td>
<td>None</td>
<td>JAPN 101/Equivalent</td>
<td>First course of a two-semester sequence in elementary Japanese. Designed to provide students with basic knowledge of Japanese for practical communication and skills in speaking, reading, writing, and listening comprehension. Provides information concerning everyday life and culture of Japan. Hiragana and Katakana syllabaries and 40 Kanji will be introduced.</td>
</tr>
<tr>
<td>JAPN 102</td>
<td>Elementary Japanese II</td>
<td>JPN 102/Equivalent/3.0 Minimum in JPN 101</td>
<td>JAPN 101/Equivalent</td>
<td>This course will focus on more advanced subjects. Students will learn more advanced grammar, vocabulary building, composition, group discussions, and more information on Japanese culture and everyday life. Additional 150 Kanji will be introduced.</td>
</tr>
<tr>
<td>JAPN 115</td>
<td>Seminar: Conversational Japanese I</td>
<td>None</td>
<td>JAPN 115/Equivalent</td>
<td>First course in conversational Japanese. Designed for people with little or no knowledge of Japanese who wish to acquire conversational skills. Students learn correct pronunciation, basic sentence structures, and practical vocabulary for everyday use and travelling. Selected features of Japanese culture and everyday life in Japan will be introduced.</td>
</tr>
<tr>
<td>JAPN 201</td>
<td>Intermediate Japanese I</td>
<td>JPN 103/Equivalent/3.0 Minimum in JPN 102</td>
<td>JAPN 102/Equivalent</td>
<td>First course of a two-semester sequence in intermediate Japanese. Includes introduction of more advanced grammar, vocabulary building, composition, group discussions, and more information on Japanese culture and everyday life. Additional 150 Kanji will be introduced.</td>
</tr>
<tr>
<td>JAPN 202</td>
<td>Intermediate Japanese II</td>
<td>JPN 202/Equivalent/3.0 Minimum in JPN 201</td>
<td>JAPN 201/Equivalent</td>
<td>Continuation of Japanese 201. Includes more advanced grammar, intensive vocabulary building, writing composition, reading contemporary materials, discussions, and student presentations of Japanese language or culture. Additional 150 Kanji will be introduced. Natural and practical communication will be emphasized. Class is taught in Japanese.</td>
</tr>
<tr>
<td>JRN 151</td>
<td>Newswriting and Reporting</td>
<td>Departmental Approval</td>
<td>JRN 151/Departmental Approval</td>
<td>This course is designed to provide an introduction to newswriting and reporting. Topics include news writing, reporting, and analysis. Areas of emphasis include interviewing techniques, public affairs reporting, and survey research.</td>
</tr>
<tr>
<td>JRN 152</td>
<td>Advanced Newswriting and Reporting</td>
<td>JRN 151/Departmental Approval</td>
<td>JRN 151/Departmental Approval</td>
<td>Continued practice in writing news stories, with special attention to developing reporting skills. Areas of emphasis include interviewing techniques, public affairs reporting, and survey research.</td>
</tr>
<tr>
<td>JRN 254</td>
<td>Editorial Writing</td>
<td>JRN 151/Departmental Approval</td>
<td>JRN 151/Departmental Approval</td>
<td>This course covers the use of drafting equipment with an emphasis on lettering, line convention, and title blocks. The students will develop a basic format for design construction drawings. The course provides essential skills for beginning the Landscaping Program.</td>
</tr>
<tr>
<td>JRN 255</td>
<td>Feature Writing</td>
<td>JRN 151/Departmental Approval</td>
<td>JRN 151/Departmental Approval</td>
<td>This course will focus on basic design process approach for developing a home landscape. The development of a basic design focusing on your own home including placement of plant material, decks, patios, water features, and other landscape elements. A course for the new homeowner, homeowner renovating his landscape, residential landscaper or nursery person.</td>
</tr>
</tbody>
</table>
**LAND 133 Residential Landscape Maintenance**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will provide a basic understanding of landscape maintenance problems and solutions. Students will develop records and schedules for pest control as well as tree, shrub, lawn, and flower maintenance. Plant selection, installation, pruning, and fertilization will be covered.

**LAND 140 Evergreen and Deciduous Trees**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course emphasizes identification of both common and uncommon deciduous trees, shrubs, overgreens, 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.

**LAND 141 Flowering Trees, Shrubs Ground Covers**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course explores spring flowering trees, shrubs, broadleaf overgreens, 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.

**LAND 142 Perennial and Annual Flowering Plants**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course covers the identification and basic culture of approximately 170 perennial and annual flowering and budding plants. Specific features of each plant will be discussed in relation to their proper landscape use. Herbs, grasses, rock and water garden plants will also be highlighted.

**LAND 145 Orientation to Landscape Architecture and Planning**  
Term Prerequisite: None  
Semester 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 will include urban planning, zoo design, ecological planning, landscape construction, recreation, and park design.

**LAND 150 Principles of Landscape Architecture**  
Term Prerequisite: None  
Semester Prerequisite: None  
Students will explore the broad scale philosophical, historical, and technical aspects of landscape architecture. Basic problem-solving techniques and design theory are introduced along with implementation of the design process.

**LAND 152 Landscape Graphics Communications - Beginning**  
Term Prerequisite: LAT 150/Concurrently  
Semester Prerequisite: LAND 152  
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.

**LAND 153 Landscape Graphics Communications - Advanced**  
Term Prerequisite: LAT 152  
Semester Prerequisite: LAND 152  
This course acquaints the student with visual presentation techniques used in landscape architecture. Plan, section, and three-dimensional graphics are explored using a range of media. The student will develop sketching and mechanical drafting techniques for the preparation of professional graphic presentations.

**LAND 160 Planting Design I**  
Term Prerequisite: LAT 150  
Semester Prerequisite: LAND 150  
This course provides an overview of the planting design principles from site analysis to construction documents. Planting design principles are emphasized as well as practical aspects of plant selection and design implementation in a range of design situations. Contemporary issues concerning today’s design and construction industries are also discussed.

**LAND 161 Planting Design II**  
Term Prerequisite: LAT 160  
Semester Prerequisite: LAND 160  
This course applies the planting design skills gained in LAND 160 to a broad range of sites and issues typically encountered in today's landscape design and construction industries. Topics covered include functional uses of plants, native plant material, and planting design in the urban environment.

**LAND 163 Designing Ornamental Garden**  
Term Prerequisite: LAT 140  
Semester Prerequisite: LAND 140/142  
This course is a practical approach to designing the herbaceous garden. Annuals, perennials, herbs, and ornamental grasses are analyzed to create a design that will be in harmony with its environment. Color, height, texture, form, and fragrance are some of the plant's characteristics which will be discussed.

**LAND 164 Site Design I**  
Term Prerequisite: LAT 150, 152  
Semester Prerequisite: LAND 150, 152  
This course emphasizes use of the design process to solve a variety of urban and non-urban site planning problems. Project design solutions require graphic delineation stressing plan view presentations. A variety of drafting scales, graphic materials, and techniques will be explored.

**LAND 165 Site Design II**  
Term Prerequisite: LAT 154  
Semester Prerequisite: LAND 164  
This course focuses on advanced analysis and planning techniques for business, housing, and recreational sites. Environmental impact considerations and land use conflicts are examined and applied in creating alternative design solutions.

**LAND 170 Site Grading I**  
Term Prerequisite: LAT 150  
Semester Prerequisite: LAND 150  
This course covers basic through advanced principles, methods and procedures for grading a site. Use of contour lines, land form interpretation, and earthwork computation are studied and applied to problem-solving for both typical and special requirement sites.

**LAND 171 Site Grading II**  
Term Prerequisite: LAT 170  
Semester Prerequisite: LAND 170  
This is an advanced site grading course that builds on the skills gained in LAND 170. This Michigan Soil Erosion Control Act is emphasized with respect to the requirements related to circulation systems and recreational and utility facilities.

**LAND 172 Site Layout**  
Term Prerequisite: LAT 171  
Semester Prerequisite: LAND 171  
This course covers plan dimensioning and layout techniques for vehicle and pedestrian circulation systems, building locations, utilities, and sporting and recreational facilities. Professional graphic techniques are emphasized.

**LAND 180 Landscape Ecology**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is for the professional as well as the interested individual covering the relatively new field of landscape environments. Develop a basic understanding of landscape communities, how they developed and how they function. Plant communities, native species, natural design, and environmental impact are some of the topics covered.

**LAND 181 Landscape Restoration and Management**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will cover the detailed steps necessary to complete a total restoration of a damaged ecosystem. Specific system designs dealing with wetlands and prairies in particular will be highlighted. Specific native plants, animals, and insects will be discussed. Field experiences and native plant identification are a critical part of this course.

**LAND 185 Arboreculre (Urban/Forestry)**  
Term Prerequisite: None  
Semester Prerequisite: None  
The care of trees and shrubs in the urban environment is thoroughly discussed. The course emphasizes the value of trees as they relate to plant selection, installation, decay prevention, pruning, and fertilizing. Field demonstrations of arboricultural practices such as pruning, bracing, and fertilizing will be offered.

**LAND 195 Irrigation Design**  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is for the professional or beginner interested in irrigation system design, installation, maintenance and troubleshooting. Lectures will cover a range of systems including residential, commercial, drip, and golf course.
LAND 225 Landscape Cost Estimation
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to the study of landscape contracting and the cost estimating process. The class covers the project management process and the costing factors associated with it. The areas of material costs, equipment cost, labor costs, and related management charges will be evaluated. The preparation of bids and the bidding process will be highlighted.

LAND 242 Ecological Land Planning
Term Prerequisite: None
Semester Prerequisite: None
This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrated. Field trips to planning meetings and project sites will be an intimate part of this course.

LAND 250 Landscape Construction Methods
Term Prerequisite: ATM 150
Semester Prerequisite: TECH 100, LAND 150
This course examines the properties and uses of concrete, asphalt, masonry, wood, and other landscape construction materials. Basic design and installation methods of landscape structures are emphasized in addition to the introduction of professional construction drafting techniques.

LAND 252 Landscape Construction Details
Term Prerequisite: LAT 250
Semester Prerequisite: LAND 250
Focuses on graphic techniques for drawing construction details and coordination of details with site plan layout. Studies detailing utilities, irrigation systems, circulation systems, recreational facilities, and various light construction features. Design-build procedures are stressed, including material tabulation and cost estimating.

LAND 255 Beginning ARC/INFO
Term Prerequisite: LAT 282/Equivalent Computer Course
Semester Prerequisite: LAND 282
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.

LAND 276 Landscape Documents, Specifications and Cost Estimating
Term Prerequisite: LAT 100
Semester Prerequisite: LAND 150
This course explores the relationship and principles between specifications and working drawings. The cost of projects as well as bid proportions will be highlighted. The student will prepare bids, write specifications and participate in a class bid opening.

LAND 277 Landscape Office Practice
Term Prerequisite: None
Semester Prerequisite: None
Introduces the elements of office business practice and organization, record-keeping, on-the-job inspection, close out, initial proposal writing, and contract formulation.

LAND 282 Microcomputers in Landscape Planning
Term Prerequisite: None
Semester Prerequisite: None
This course assumes no previous computer exposure or experience. It is 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 inventory, cost estimating, and many other related areas.

LAND 283 Beginning LandCADD
Term Prerequisite: LAT 282/Equivalent
Semester Prerequisite: LAND 282/Equivalent
This course is for the individual with basic AutoCAD/LandCADD exposure interested in learning more about computer-aided design using the LandCADD software package. The LandCADD site planning module will be fully explored as well as additional modules including irrigation design, plant data base, E-Z estimate, and quadrangles. Advanced 3-D design options will also be covered.

LAND 284 LandCADD Advanced
Term Prerequisite: LAT 283
Semester Prerequisite: LAND 283
This course is a continuation of Beginning LandCADD. Advanced options will be explored including 3-D.

LAND 285 Microcomputer Animation
Term Prerequisite: Departmental Approval
Semester Prerequisite: LAND 282
This course will familiarize the student with the video animation aspects of computer design and presentation. The student will learn to produce an animation project using the latest computer technology. Students will also become familiar with the integration of video and animation in various design and management-related projects.

LAND 286 LandCADD: Videoscapes
Term Prerequisite: LAT 282
Semester Prerequisite: LAND 282
This computer course will cover how to use video-imagery and animation in a landscape design situation by way of lecture, video and computer usage. Computer paint as well as imaging will be demonstrated. LandCADD's software, as well as others will be utilized.

LAND 295 Landscape Independent Study
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in Landscape Architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required.

LAND 296 Landscape Project Lab
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in Landscape Architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required.

LAND 297 Landscape Project Lab
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in Landscape Architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required.

LEG 115 Legal Assistant Career and Ethics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Introduction to the legal assistant's role in the legal system, including essential skills used in the litigation process and law practice. Introduces student to legal terminology, legal research, procedural and substantive law. Surveys paralegal employment and regulation. 2.0 minimum required to continue program.

LEG 120 Legal Research I
Term Prerequisite: Minimum 2.0 in LAW 115
Semester Prerequisite: 2.0 in LEG 115, LEG 125
Introduces research procedures and resources for finding federal and Michigan law. Students will learn to evaluate research publications: digests,encyclopedias, reporters, statutes, court rules, treatises, administrative publications, ciphers, etc. Students are given research assignments utilizing the publications, and the assignments must be completed using the Michigan Uniform System of Citation.

LEG 121 Legal Writing I
Term Prerequisite: LAW 120
Semester Prerequisite: LEG 120, WRIT 122
Students will learn to analyze court opinions and apply them to particular fact situations. This skill will then be used to write summaries of court opinions, legal memoranda, appellate briefs and other legal documents. Learning methods include reading assignments, class discussion, lecture and writing assignments of increasing difficulty.

LEG 130 Michigan Laws and Courts
Term Prerequisite: None
Semester Prerequisite: None
Students will learn the various Michigan courts, the federal court system, alternatives to litigation, and how to identify and properly cite various sources of law. Areas of law studied will include criminal, domestic, probate, employment, and property. Note: Course is designed for court and conference reporting.

LEG 150 Critical Thinking in Law
Term Prerequisite: None
Semester Prerequisite: None
This course strongly emphasizes the "learn by doing" approach, specifically by utilizing group dynamics. The panoramas of thinking skills, particularly those relevant in law and criminal justice, will be examined and practiced. Innovative evaluation skills, both personal and group, are a regular part of each session.
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<th>Course Code</th>
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MACH 120 - Effective Use of Machinery's Handbook
Term Prerequisite: ATM 151
Semester Prerequisite: TECH 101
Machinery's Handbook has been recognized as the "bible" for all phases of the metal working industry. This course will familiarize each student with the effective utilization of information contained in Machinery's Handbook.

MACH 130 - Die Construction
Term Prerequisite: DT 100, ATM 150
Semester Prerequisite: TECH 090, TECH 100
This course will provide each student with a basic understanding of the essential principles of cutting and forming operations, die components such as punches, punch plates, die blocks and strippers, and an in-depth knowledge of how to repair and maintain the equipment common to the die industry.

MACH 135 - Metallurgy and Heat Treat
Term Prerequisite: None
Semester Prerequisite: None
Course is designed to give students a working knowledge of the properties, uses and heat treat processes of commonly used metals and alloys. The basic principles of metallurgy presented apply to the design, selection, processing, and testing of metal products.

MACH 140 - Tooling Theory and Practices
Term Prerequisite: ATM 100
Semester Prerequisite: MACH 110
This course examines tooling used in mechanical material removal. Tooling materials from high speed steel to diamond will be discussed and demonstrated. Tooling geometry, re-sharpening methods, speeds and feeds, failure mechanisms, and problem diagnosis will be addressed. Students will analyze tooling performance and write up technical reports.

MACH 150 - Introduction to Plastics
Term Prerequisite: None
Semester Prerequisite: None
This course provides each student with a comprehensive understanding of plastics, which includes the properties, design factors and manufacturing processes.

MACH 194 - Machine Tool Technology Project Lab
Term Prerequisite: ATR 103/Departmental Approval
Semester Prerequisite: MACH 100/Departmental Approval
Advanced course for students wishing to do in-depth work in the machine shop area or to develop trade entry skills. Students select projects compatible with their individual fields of work. (Approval may be given to take this course twice for a maximum of eight credits.)

MACH 210 - Principles of Electric Discharge Machining (EDM)
Term Prerequisite: CNC 101
Semester Prerequisite: CNCP 110
This course introduces the student to the fundamentals of Electrical Discharge Machining (EDM). Safety, principles of operation, programming, and operation of both Ram and Wire EDM are explored. Lectures, demonstrations and projects are used. Projects assigned will require set-up, programming, and operation of EDM machines.

MATH 001 - Seminar: Math Minus Anxiety
Term Prerequisite: None
Semester Prerequisite: None
A workshop for students who feel insecure about doing math and need help and encouragement to succeed in the math required for their goals. Materials and exercises are aimed at reducing math anxiety, improving math study skills, and practicing problem-solving techniques. Students at any level of math may enroll.

MATH 005 - Mathematics Laboratory
Term Prerequisite: None
Semester Prerequisite: None
When registering for a Math Lab course, students must register for both a specific course and a MATH 005 section. The MATH 005 section determines the time and place of attendance in a Mathematics Laboratory. This time is used for studying, Instructional help, and testing.

MATH 020 - Arithmetic Skills
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
The course focuses on arithmetic skills and practical applications with whole numbers, decimals, fractions, percents and proportions. Work is done both with and without a calculator. Confidence building and study skills for success in mathematics are emphasized.

MATH 040 - Pre-Algebra Mathematics
Term Prerequisite: MTH 006/Placement Test
Semester Prerequisite: MATH 020/Placement Test
This course reviews whole numbers, fractions, and decimals. Topics studied include ratio and proportions, percents, measurement (including metric), statistical graphs, geometry, signed numbers, and simple algebraic expressions and equations. Applications are emphasized in all topics.

MATH 090 - Beginning Algebra: Part A
Term Prerequisite: 2.0 in MTH 009/Placement Test
Semester Prerequisite: 2.0 in MATH 040/Placement Test
This is the first half of MATH 062, for those who wish to cover Beginning Algebra in two semesters. The topics include factoring polynomials, operations with algebraic fractions, graphing linear equations in two variables, solving systems of linear equations, square roots, and solving quadratic equations. Applications are included throughout the course.

MATH 061 - Beginning Algebra: Part B
Term Prerequisite: 2.0 in MTH 010
Semester Prerequisite: 2.0 in MATH 060
This is the second half of MATH 062, for those who wish to cover Beginning Algebra in two semesters. The topics include factoring polynomials, operations with algebraic fractions, graphing linear equations in two variables, solving systems of linear equations, square roots, and solving quadratic equations. Applications are included throughout the course.

MATH 063 - Beginning Algebra
Term Prerequisite: 2.0 in MTH 009/Placement Test
Semester Prerequisite: 2.0 in MATH 040/Placement Test
Topics include the real number system, basic properties, simplifying expressions, solving linear equations and inequalities, properties of integer exponents, operations with polynomials, factoring, operations with algebraic fractions, graphing linear equations in two variables, solving systems of linear equations, square roots, and solving quadratic equations. Applications are included throughout the course.

MATH 075 - Basic Geometry
Term Prerequisite: 2.0 in MTH 012/Placement Test
Semester Prerequisite: 2.0 in MATH 063/Placement Test
An informal course for students who wish to review or be introduced to the basic geometry needed for further study in mathematics. Topics from both plane and solid geometry are covered, including similar figures, congruent triangles, and properties of angles and of the circle. Proofs and constructions are not included.

MATH 112 - Intermediate Algebra
Term Prerequisite: 2.0 in MTH 012/Placement Test
Semester Prerequisite: 2.0 in MATH 063/Placement Test
This is an extension of Beginning Algebra with emphasis on polynomials, rational expressions, radical expressions, radicals, graphing linear and quadratic equations and inequalities, complex numbers, and functions. Also emphasized are inequalities, rational equations, quadratic equations, systems of equations, and their applications.

MATH 121 - College Algebra I
Term Prerequisite: 2.0 in MTH 102/Placement Test
Semester Prerequisite: 2.0 in MATH 112/Placement Test
First in two-course sequence. Graphing calculator required. Topics include functions, mathematical models, symmetry, absolute value, distance, solving equations algebraically and graphically, solving inequalities, linear functions, quadratic functions, geometric transformations, real and complex zeros, and rational, radical, exponential, and logarithmic functions. Degree credit may not be earned in both MATH 121-122 and MATH 126.

MATH 122 - College Algebra II and Trigonometry
Term Prerequisite: 2.0 in MTH 164/Placement Test
Semester Prerequisite: 2.0 in MATH 121/Placement Test
Second in a two-course sequence. Graphing calculator required. Topics include right triangle trigonometry, reference angles, graphing, identities, inverse trig functions, law of sines and cosines, De’Moivre’s Theorem, roots of complex numbers, binomial theorem, polar coordinates, vectors, sequences, mathematical induction, and series. Degree credit may not be earned in both MATH 121-122 and MATH 126.

MATH 126 - College Algebra and Trigonometry
Term Prerequisite: 2.0 in MTH 102/Placement Test
Semester Prerequisite: 3.0 in MATH 112/Placement Test
Combination of MATH 121 and 122. Topics include functions, absolute value, solving equations and inequalities, graphing, linear and quadratic functions, zeros, rational, radical, exponential, logarithmic and trigonometric functions, right triangle trigonometry, law of sines and cosines, De’Moivre’s Theorem, binomial theorem, vectors, sequences, mathematical induction, and series. Degree credit may not be earned in both MATH 126 and MATH 121-122.

MATH 130 - Finite Mathematics
Term Prerequisite: 2.0 in MTH 164/Placement Test
Semester Prerequisite: 2.0 in MATH 121/Placement Test
This is an alternate course to MATH 122 for students whose programs do not require trigonometry. Topics studied include matrices, linear programming, permutations, combinations, probability, random variables, and the binomial theorem.
MATH 141 Calculus with Applications
Term Prerequisite: 2.0 in MTH 164/Placement Test
Semester Prerequisite: 2.0 in MTH 121/Placement Test
This course is for students in business, economics, social science, life sciences, and other areas not requiring a rigorous study of calculus. Topics studied include limits, derivatives, and integrals with an emphasis on applications to the above-mentioned disciplines.

MATH 151 Calculus I
Term Prerequisite: 2.0 in MTH 165/Placement Test
Semester Prerequisite: 2.0 in MTH 122/MATH 125/Placement Test
The first of a three-semester sequence in differential and integral calculus. Topics include limits, continuity, differentiation of rational and trigonometric functions, applications of derivatives, curve sketching, elementary indefinite integration, and the Fundamental Theorem of Calculus.

MATH 152 Calculus II
Term Prerequisite: 2.0 Minimum in MTH 213
Semester Prerequisite: 2.0 Minimum in MATH 151
Applications of the definite integral are emphasized along with methods of integration and differentiation involving exponential, trigonometric, and logarithmic functions. Integration by parts, partial fractions, improper integrals, polar coordinates, sequences, and series are also studied.

MATH 201 Math for Liberal Arts
Term Prerequisite: MTH 102 Proficiency
Semester Prerequisite: MTH 112 Proficiency
Topics studied provide an understanding of what mathematics is. Topics include number theory, logic, probability, mathematical games, graph theory, geometry, and algorithmic reasoning. A strong historical theme is present throughout. The student is involved in concept development as well as in finding answers.

MATH 253 Calculus III
Term Prerequisite: 2.0 Minimum in MTH 214
Semester Prerequisite: 2.0 Minimum in MATH 252
Applications of infinite series are emphasized. Vectors, applications of vectors, multivariable functions, partial differentiation, gradients, directional derivatives, double and triple integration are also studied.

MATH 254 Introduction to Differential Equations
Term Prerequisite: MTH 215
Semester Prerequisite: 2.0 Minimum in MATH 253
An introduction to the basic methods for solving ordinary differential equations, including the methods of undetermined coefficients, variation of parameters, series, Laplace transforms, and numerical methods. Applications are emphasized.

MATH 260 Linear Algebra
Term Prerequisite: 2.0 Minimum in MTH 215
Semester Prerequisite: 2.0 Minimum in MATH 253
This introduction to linear algebra includes the study of systems of linear equations, matrix algebra, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications.

MATH 281 Honors Math Seminar I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed.

MATH 282 Honors Math Seminar II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students take this course after taking MATH 281. Students solve a set of challenging mathematics problems, different from those in MATH 281, which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed.

MATH 295 Independent Study in Mathematics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote three or more hours per week to this study in addition to their work with the assigned instructor.

MATH 296 Independent Study in Mathematics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote six or more hours per week to this study in addition to their work with the assigned instructor.

MATH 297 Independent Study in Mathematics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote nine or more hours per week to this study in addition to their work with the assigned instructor.

MATH 298 Independent Study in Mathematics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote 12 or more hours per week to this study in addition to their work with the assigned instructor.

MDCS 200 Dynamics of Relationships
Term Prerequisite: None
Semester Prerequisite: None
This seminar aims to enhance the skills of all personnel in individual listening and in facilitation of groups and teams. If participants are able to use these skills, they are more likely to function more effectively as they seek to implement organizational goals and objectives.

MDCS 201 Listening and Facilitation Skills
Term Prerequisite: None
Semester Prerequisite: None
Effective communication skills are essential for any relationship. The ability to establish and maintain productive relationships is vital in a professional as well as personal life. Increasing your Effectiveness explores factors affecting interpersonal relationships and the processes used to give and gather information.

MDCS 203 Increasing Human Effectiveness
Term Prerequisite: None
Semester Prerequisite: None
This seminar will increase participants’ understanding of what is and what is not sexual harassment and how to handle a situation that involves sexual harassment, whether subtle or blatant, whether against male or female.

MDCS 205 Valuing Cultural Diversity
Term Prerequisite: None
Semester Prerequisite: None
The aim of this seminar is to apply knowledge learned about workforce diversity to life and work situations. Working with diverse populations is a critical factor for success in the 1990s and beyond. People who understand and value cultural, gender, and racial differences will be better equipped to work with one another and to improve their working relationships. Participants will apply specific program content to situations involving potential conflict, opportunities for self-awareness, and work-group effectiveness.

MDCS 210 Solving Time Management Frustrations
Term Prerequisite: None
Semester Prerequisite: None
Time management problems originate from numerous sources. Participants will identify and analyze these sources to provide a firm basis for solving frustrating time problems. This seminar will teach how to establish goals, schedule, and utilize time management skills.

MDCS 211 How to Get Things Done
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed for first-level supervisors, office managers, and administrative assistants. It will sharpen communication skills and time management capabilities as well as encourage an action plan.

MDCS 214 Stress Management
Term Prerequisite: None
Semester Prerequisite: None
This seminar will help participants prepare an individual stress management plan that can be applied to personal or work situations. Topics include uncovering stressors, assessing their impact, and utilizing coping techniques.

MDCS 220 Managing Your Career
Term Prerequisite: None
Semester Prerequisite: None
An intensive one-day seminar designed to acquaint the participants with personal career-planning techniques. The program emphasizes self-direction and responsibility for career growth. Primarily emphasis is upon becoming successful in one’s current position first and then building long-term career goals based upon this success.
MDCS 221 You and Your Boss: A Successful Team .5
Term Prerequisite: None
Semester Prerequisite: None
There's skill involved in complementing the strengths of your boss and together forming a productive work team. This is a specific "how to" course that trains participants to assess their strengths and those of their boss and to build on strengths to develop successful working relationships.

MDCS 225 Problem-Solving/Decision-Making .5
Term Prerequisite: None
Semester Prerequisite: None
Problems occur in all areas of life. This seminar acquaints participants with practical strategies, and workable skills for handling problems, and it offers practice activities for solving problems as a group or an individual.

MDCS 229 Effective Presentation Skills 1.25
Term Prerequisite: None
Semester Prerequisite: None
This two-day seminar covers the techniques of an effective presentation: planning, preparing, and presenting. This seminar culminates with participants giving a 10-minute presentation. Emphasis will be given to practicing and critiquing presentation skills.

MDCS 230 Developing Instructional Materials 1.75
Term Prerequisite: None
Semester Prerequisite: None
Learn how to write goals and objectives, sequence instruction, identify strategies, develop assessment tools, and evaluate your instructional materials. During the seminar, you will develop materials for your own training programs.

MDCS 231 Guiding the Training Process 1.75
Term Prerequisite: None
Semester Prerequisite: None
Learn the necessary skills for facilitating a training program. Includes asking and answering questions, administering and debriefing exercises, giving constructive feedback, guiding small group discussion, demonstrating, and prompting learners.

MDCS 232 Applying the Principles of Adult Learning .5
Term Prerequisite: None
Semester Prerequisite: None
This seminar considers four fundamental principles of adult learning. Topics include motivation resistant learners, creating a positive climate for learning, participative training techniques, and learning contracts.

MDCS 233 Instructional Media for Trainers 1.25
Term Prerequisite: None
Semester Prerequisite: None
This seminar introduces trainers to media available to make instruction more effective. Transparencies, charts, slides, videotapes, audiotapes, and other media will be discussed. Participants will analyze their own instructional programs and identify the appropriate media to use.

MDCS 234 Teaching Through Demonstration 1.25
Term Prerequisite: None
Semester Prerequisite: None
This seminar presents several specific strategies for teaching skills in one-on-one training situations. Each strategy is presented and demonstrated, enabling participants to evaluate their classroom and learn to overcome anxiety and learning barriers.

MDCS 235 Using Audiovisual Equipment 1.25
Term Prerequisite: None
Semester Prerequisite: None
In this basic level seminar, participants will learn to set up, operate, trouble shoot, and disassemble the following equipment: 16mm film projector, overhead projector, slide projector, audiotape player, video recorder, and flip chart.

MDCS 239 Train-the-Trainer 1.75
Term Prerequisite: None
Semester Prerequisite: None
The new and the seasoned trainer can use this seminar to re-think training strategies and to sharpen skills in developing and facilitating training activities. The emphasis in this seminar is on the practical strategies of organizing and conducting instructional or training activities. There will be an opportunity to practice these skills.

MDCS 240 Telemarketing .5
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to make people more productive over the telephone. It teaches telephone selling skills to help participants make better use of time and increase sales. It will also show how to put information power to work.

MDCS 245 Customer Service 1.25
Term Prerequisite: None
Semester Prerequisite: None
All employees have the potential for creating good customer relations and improving the image of the organization. The critical factors include increased motivation through a positive mental attitude, effective communication with different types of customer personalities, sensitive handling of customer complaints, and successful strategies for meeting needs to satisfy customers.

MDCS 250 Management Skills I 1.25
Term Prerequisite: None
Semester Prerequisite: None
This two-day seminar is designed to help supervisors analyze their present strengths and skills affecting their management of groups of employees. Participants will explore and practice techniques to aid them in becoming more effective managers.

MDCS 251 Management Skills II 1.25
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to help supervisors analyze their present strengths and skills affecting their management of groups of employees. Participants will explore and practice techniques to aid them in becoming more effective managers.

MDCS 252 Supervisory Skills Training 2.5
Term Prerequisite: None
Semester Prerequisite: None
Participants are trained in the essential processes of supervision: leading with a participative style, giving instructions, communicating effectively, “active listening,” improving employee performance, conducting performance appraisals, problem solving, managing time, and building team cohesiveness.

MDCS 255 Power and Risk Management 1.25
Term Prerequisite: None
Semester Prerequisite: None
This workshop is designed to give some basic power concepts, and to help develop an understanding of how the organization in which we work affects one's ability to have and to use power effectively. This workshop looks at the organizations and how they affect people's power strategies.

MDCS 259 Managing Problem Employees .5
Term Prerequisite: None
Semester Prerequisite: None
Participants will learn why some employees perform their jobs unacceptably and are "problems" to supervisors and what they can do about them.

MDCS 260 Leading Diverse Work Groups 1.5
Term Prerequisite: None
Semester Prerequisite: None
Participants in this seminar will learn to apply knowledge about work force diversity to work situations relative to human resource management, communication, potential conflict, and work group effectiveness. Participants will be better able to do their job, and be better equipped to promote improved working relations within the organization.

MDCS 261 Managing Diverse Workforce '90s 1.75
Term Prerequisite: None
Semester Prerequisite: None
Participants in this seminar will learn to apply knowledge about work force diversity to work situations relative to human resource management, communication, potential conflict, and work group effectiveness. Participants will be better able to do their job, and be better equipped to promote improved working relations within the organization.

MDCS 264 Leading Effective Meetings .5
Term Prerequisite: None
Semester Prerequisite: None
The purpose of this workshop is to help participants develop the skills necessary for leading effective meetings. Those skills include the many facets of planning and preparing for a meeting, conducting a meeting, and following up on a meeting.

MDCS 266 Managing Organizational Change .5
Term Prerequisite: None
Semester Prerequisite: None
This workshop will enable participants to manage the change process in their current work environment. Participants will identify the positive and negative effects of change on the organization, subgroups within the organization and the individual; will develop alternatives for implementing change; and will identify support systems in internal and external environment.
MDCS 268 Project Management 1.25
Term Prerequisite: None
Semester Prerequisite: None
This training will prepare state personnel to understand and effectively adminis-
ter a project. All aspects of analyzing project intent, planning, budgeting, use of
funds, program evaluation, staff administration, information management, report
writing, crisis elimination, and trouble avoidance, will be covered.

MDCS 270 Management I 2.5
Term Prerequisite: None
Semester Prerequisite: None
This seminar will help supervisors analyze their strengths and skills and explore
techniques to help them become more effective managers. Participants will be
able to manage interactions with employees more effectively using a participa-
tive style.

MDCS 271 Management II 2.5
Term Prerequisite: None
Semester Prerequisite: None
This seminar is designed to help supervisors analyze their management strengths
and skills. Participants will explore techniques to help them manage their
employees more effectively.

MDCS 272 Management III 2.5
Term Prerequisite: None
Semester Prerequisite: None
Effective managers must know how to work with groups, both direct and indirect.
Management III examines group dynamics and processes effective ways of
leading and working with and through groups. Since managing is more than
knowledge, this program stresses development of attitude, skills, and behavior.

MDCS 275 Dynamic Leadership 5
Term Prerequisite: None
Semester Prerequisite: None
Dynamic leaders create visions and translate those visions into reality within their
organizations. This seminar describes the essential features and functions
of dynamic leadership in the context of the present world market. Participants
will be inspired to develop their abilities as dynamic leaders.

MDCS 276 Team Building 5
Term Prerequisite: None
Semester Prerequisite: None
Dynamic leaders develop dynamic teams. They need followers, but followers
who can function independently and cooperatively in the organizational endea-
vor. This seminar instructs participants in practical strategies for creating dynamic
teams.

MDCS 277 Leading Group Decision-Making 5
Term Prerequisite: None
Semester Prerequisite: None
In order for groups to work together well, leaders must be skilled in people func-
tions and task functions. They must be able to lead a group through a process of
decision-making while maintaining positive relationships and high quality deci-
sions. This seminar will train participants in the skills of leading and the process-
of decision-making.

MDCS 278 Strategic Planning 5
Term Prerequisite: None
Semester Prerequisite: None
Effective strategic planning is essential for long-term success in the work market.
It focuses on doing the right thing, not doing the right thing. This seminar teaches a
team approach to strategic planning.

MDCS 279 Communicating Thoughts Effectively 5
Term Prerequisite: None
Semester Prerequisite: None
Collecting one's thoughts and speaking extemporaneously to present one's
reaction, viewpoint, or pertinent information is a vital ability for leaders. This
workshop will instruct participants in the strategies for gathering one's thoughts
and presenting them clearly and logically.

MDCS 280 Improving Interpersonal Relationships 5
Term Prerequisite: None
Semester Prerequisite: None
Good interpersonal skills are essential for productive working relationships and for
maintaining an efficient working environment. This seminar provides training to
managers on techniques for strengthening interpersonal skills for improved
working relationships.

MDCS 281 Working With Difficult People 5
Term Prerequisite: None
Semester Prerequisite: None
Difficult people create problems! In this practical seminar, participants will
observe and practice effective strategies for handling difficult people.
Participants will be able to reduce the problems difficult people create.

MDCS 282 Solving Performance Problems 5
Term Prerequisite: None
Semester Prerequisite: None
A primary element for solving performance problems is creating and sustaining a
supportive work environment. This seminar provides training to supervisors and
managers that will help identify and solve work problems and encourage peak
employee activity.

MDCS 290 Selection and Evaluation Interviewing 1.25
Term Prerequisite: None
Semester Prerequisite: None
This seminar covers the three stages of the hiring process. Activities include
developing interview questions from civil service job descriptions, discussing
Equal Employment Opportunity and Affirmative Action concerns, practicing inter-
view techniques, interpreting interview information, and describing critical orien-
tation procedures for new employees.

MDCS 295 Job Description and Performance Standards 5
Term Prerequisite: None
Semester Prerequisite: None
This workshop will enable participants to manage the change process in their
current work environment. Participants will identify the positive and negative
effects of change on the organization, subgroups within the organization and the
individual, will develop alternatives for implementing change, and will identify
support systems in internal and external environment.

MDCS 296 Employee Selection Interviewing 5
Term Prerequisite: None
Semester Prerequisite: None
Learn a three-stage model for interviewing (planning, conducting the interview,
deciding), the characteristics of an effective interview, and legal and illegal pre-
employment inquiries. Practices skills for conducting the interview.

MDCS 297 Coaching Work Performance 5
Term Prerequisite: None
Semester Prerequisite: None
Learn to address performance problems so that employees know what is wrong
and how to correct it. Learn how to reinforce expected performance, communi-
cate expectations, and utilize effective feedback methods and goal setting.

MDCS 298 Employee Performance Appraisal 5
Term Prerequisite: None
Semester Prerequisite: None
The primary reason for implementing a performance appraisal system is to effec-
tively communicate with employees about job performance. In this seminar
participants will learn how to set standards, evaluate performance, and conduct
performance appraisal meetings.

MDCS 299 Managing Discipline 5
Term Prerequisite: None
Semester Prerequisite: None
Learn the difference between prevention and corrective discipline, how to utilize
documentation, and the critical steps of due process to ensure the rights of all
individuals.

MEDA 100 IA Administrative/Communication Skills 5
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Introduction to role of medical assistant administrative/clerical functions: profes-
sionalism, written communication, telephone communication, scheduling, refer-
als, filing, medical records management, processing incoming and outgoing
mail, pegboard system, and basic banking functions. Also provides students with
an understanding of interpersonal skills.

MEDA 114 Legal Ethic Concepts 1
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Designed to familiarize the student with the basic concepts relating to medical
ethics, legal medicine, and professional liability.

MEDA 124 Microcomputers in Health 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Allied Health Professional
Using IBM microcomputers, students are offered a basic understanding and prac-
tical application of hardware and software used in medical offices. This
includes extensive hands-on training with DOS and applications including word
processing, database management, and medical office management.

MEDA 131 Clinical Skills I 4
Term Prerequisite: CHS 121, AHC 108
Semester Prerequisite: AHC 108
Designed to provide knowledge in clinical skills relating to the following topics:
physical measurements; health history and physical examination; infection con-
trol; instrument sanitation, disinfection and sterilization; health care process;
problem-oriented medical records; physical therapy; and universal precautions.
MEDA 132 Clinical Skills II
Term Prerequisite: MA 131
Semester Prerequisite: MEDA 131
Designated to cover both in theory and campus lab the more advanced technical skills necessary to perform in the clinical setting. Skills and procedures covered will include surgical asepsis, minor surgery assisting, electrocardiography, medication administration, pulmonary function screening, and collection of specimens.

MEDA 141 Basic Medical Laboratory Procedures
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course introduces the student to the clinical laboratory. Laboratory organization and safety will be discussed. Quality assurance issues will be emphasized. Basic principles and procedures for laboratory tests will be presented including collection and preparation of specimens, venipuncture, capillary puncture, urinalysis, and hematology testing.

MEDA 142 Advanced Medical Laboratory Procedures
Term Prerequisite: MA 141
Semester Prerequisite: MEDA 141
This course enables the student to understand and perform some of the more complex laboratory tests performed in medical offices. Basic pathophysiology will be discussed. Tests from the following areas will be covered: clinical chemistry, immunology, microbiology and hematology, Collection and preparation of specimens, etc.

MEDA 143 Introduction to Radiography
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course is designed to give the medical assistant an overview of the field of radiology. The course will include both lecture and observational time.

MEDA 151 Medical Assistant Pharmacology
Term Prerequisite: Departmental Approval
Semester Prerequisite: Admission to Program
Using basic anatomy, physiology, and pharmacology concepts, medications will be presented as they affect various body systems. The medical assistant's responsibilities to pharmacology in the office setting will be emphasized.

MEDA 181 Administrative Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Admission to Program
Administrative internships are designed to provide application of administrative theory. This course is programmed with specific performance objectives and activities.

MEDA 182 Clinical Internship
Term Prerequisite: Departmental Approval
Semester Prerequisite: Admission to Program
Clinical internships are designed to provide application of theory and practice relevant to the clinical skills required of a medical assistant. The courses are designed with specific performance objectives and activities.

METR 220 Introduction to Meteorology
Term Prerequisite: NS 121/Instructor Approval
Semester Prerequisite: Science Inventory Passed, MATH 062
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.

MFQM 101 Industrial Hydraulics
Term Prerequisite: ATM 151
Semester Prerequisite: TECH 100
Industrial Hydraulics introduces the theory of fluid power and circuits covering pumps, pressure valves, flow valves, cylinders, filters and motors, etc., as they are used in industry today. This will be done with lectures and labs related to each of the respective components.

MFQM 102 Industrial Pneumatics
Term Prerequisite: ATM 151
Semester Prerequisite: TECH 100
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.

MFQM 110 Machine Maintenance II
Term Prerequisite: Departmental Approval
Semester Prerequisite: TECH 100/Equivalent
Theory and industrial application of machine repair, preventive maintenance, safe practices, and troubleshooting, with actual dismantling and rebuilding of tool room machines.

MFQM 111 Machine Maintenance II
Term Prerequisite: ATR 218
Semester Prerequisite: MFQM 110
Advanced theory and practice of machine tool repair including preventive maintenance. Also, the theory and repair of pumps and pneumatic tools will be covered.

MFQM 120 Industrial Presses
Term Prerequisite: None
Semester Prerequisite: None
Covers different types of mechanical presses, terminology, purposes, and functions in industry. Includes moves and slides of mechanical action, maintenance systems, and safety, supplemented by visits to plants using presses and press repairs. For mechanical trades apprentices, press repair and maintenance personnel, stamping plant employees, press operators, and die setup employees.

MFQM 125 Rigging
Term Prerequisite: ATM 150
Semester Prerequisite: TECH 100/Equivalent
Covers uses and strengths of ropes, chains, block and tackles, and the construction and erection of gin poles, with a study of rope knots used in rigging. Also, safe working strength of slings, hooks, sheaves, ropes and chains, and the use of personal safety equipment will be covered.

MFQM 170 Fork Lift Truck Driver Training
Term Prerequisite: None
Semester Prerequisite: None
This course will teach the safe operation of industrial lifting and touring trucks. All instruction teaches toward a State of Michigan lift truck certificate.

MGMT 200 Problem Solving and Thinking Skills for Managers
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to provide business students with a repertoire of basic and higher order thinking skills, including critical thinking, creative thinking, decision-making, and problem-solving for use in management situations.

MGMT 223 Supervisory and Human Resources Management
Term Prerequisite: None
Semester Prerequisite: None
This course presents management principles and practices for first-line supervisors. Management functions of planning, organizing, staffing, directing, and controlling are discussed. Employee relations from recruitment through post-retirement are emphasized. Students will understand the responsibilities of supervisors for overall work performance and employee development and evaluation.

MGMT 225 Principles of Management
Term Prerequisite: None
Semester Prerequisite: None
Management principles for middle and upper level managers: management relationships, communications, morale, motivation, history of management, theoretical framework, practical applications, qualifications of executives, business ethics, and managerial functions.

MGMT 227 Training and Development for Business
Term Prerequisite: None
Semester Prerequisite: None
Training and development for business is a course designed to cover all aspects of training in the business environment. The course will focus on assessing training needs, identifying training barriers, curriculum design, instructional techniques, evaluation, and adult learning theory.

MGMT 228 Organizational Behavior
Term Prerequisite: None
Semester Prerequisite: None
Examines the dynamics of relationships at work. Integrates and applies behavioral and social science knowledge, using a systems approach, and focusing on the nature of both people and organizations. Students will study individual and group behavior and will have opportunities to work on skills necessary for successful interaction in organizations.

MGMT 237 Introduction to Total Quality Management
Term Prerequisite: None
Semester Prerequisite: None
Provides an introduction to concepts of total quality management applied to nonmanufacturing industries. Covers the history of TQM including key thinkers/leaders. Explores new ways of thinking and leading, TQM tools and practices, using teams, empowerment, and "learning organizations."
MGMT 239 Time and Stress Management
Term Prerequisite: None
Semester Prerequisite: None
Explores relationship between time and stress management: stress is the causal
factor for many of our physical and psychological problems. Suggests methods
for harnessing its energy positively. Techniques and strategies for wise utiliza-
tion of time and energy. Emphasis on creating action plan and initiating corre-
ctive actions.

MGMT 240 How Managers Make Things Happen
Term Prerequisite: None
Semester Prerequisite: None
A practical skills-building program that concentrates on the functions that most
often determine success in management. It shows you how to improve your per-
formance in each key area by analyzing your job, breaking it down into function-
al components, spotting weaknesses, and taking concrete action to turn them
around.

MGMT 241 How Successful Women Manage
Term Prerequisite: None
Semester Prerequisite: None
This course is an overview of the various functions and processes involved in
management. Students will explore possible explanations for women's slow rate
of progress in attaining managerial positions. It is enlightening and an absolute
"must" for any woman who is considering entering or is now a part of management.

MGMT 242 Manager's Guide to Working With People
Term Prerequisite: None
Semester Prerequisite: None
Designed for managers who want to work effectively with people, both on and off
the job. Students will acquire an understanding of human needs and motivation,
leadership styles, problem-solving techniques, and effective self-assertive meth-
ods. Students will also learn how to deal with difficult behavior by instituting posi-
tive work strategies.

MGMT 243 How to Delegate Effectively
Term Prerequisite: None
Semester Prerequisite: None
This course will show participants how to increase their productivity by doing
less while managing more. It is designed to increase comfort with the delegation
process which will help improve job performance.

MGMT 244 Supervisory Management
Term Prerequisite: None
Semester Prerequisite: None
Designed to help managers at all levels to develop, enhance and update their
skills. Major areas of emphasis include planning, operating, controlling, person-
nel functions, decision-making, job design, job analysis, and quality control within
the department.

MGMT 245 Leadership Skills for Managers
Term Prerequisite: None
Semester Prerequisite: None
In this course the learner 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.

MGMT 246 Fundamentals of Modern Personnel Management
Term Prerequisite: None
Semester Prerequisite: None
This course is a comprehensive source of personnel ideas and techniques to
help managers in an organization contribute to a human resources program that
will increase productivity and profits.

MGMT 247 How to be a Successful Project Manager
Term Prerequisite: None
Semester Prerequisite: None
This course provides a comprehensive understanding of the techniques and
methodology needed to plan and control any project, large or small, in any
industry. Both basic and more sophisticated tools are covered. Students will also
learn how to use these tools as decision aces during the tracking and controlling
phase of the project.

MGMT 250 Fundamentals of Finance and Accounting/Non-Financial Mgrs
Term Prerequisite: None
Semester Prerequisite: None
Provides the manager with an understanding of finance. Will help students learn
to read and interpret financial statements, annual reports, and balance sheets.
This course will help students use financial and accounting data more effectively.

MGMT 251 Communication Skills for Managers
Term Prerequisite: None
Semester Prerequisite: None
This course will help the busy manager learn to use more effectively the tools
he/she has to get a message across. Includes areas of practical application such
as effective writing of letters, memos and reports, running meetings, and inter-
viewing and listening. A video supplement is included.

MGMT 252 How to Deliver a Winning Presentation
Term Prerequisite: None
Semester Prerequisite: None
This course will provide the student with a basic awareness of the steps neces-
sary 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.

MGMT 253 How to Write Winning Reports
Term Prerequisite: None
Semester Prerequisite: None
This course helps students develop a more concise straightforward writing style.
It will help you express your ideas more clearly in memos, letters and reports.

MGMT 254 How to Write a Business Plan
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for managers who want to give their company's business
plan real meaning and power. Participants will learn how to develop realistic
action programs and responsibility plans for allocating scarce resources, install-
ing workable monitoring and control systems, and creating supportive policies
and procedures.

MGMT 255 How to Use Lotus 1-2-3
Term Prerequisite: None
Semester Prerequisite: None
In this course students will learn what Lotus can do for them. This interactive
computer course uses a "private tutor," which is an audiotape, to talk students
through each essential step and procedure of Lotus 1-2-3.

MGMT 256 Strategic Planning for Entrepreneurial Business
Term Prerequisite: None
Semester Prerequisite: None
Students and managers of new and growing businesses, or of companies that
operate within an entrepreneurial environment, will learn how to prepare a
strategic plan. Students will learn about organizational charts, goal-setting mat-
ces, diagnostic summary sheets, and checklists—all designed to help them cre-
ate a plan that works.

MGMT 257 Using Math as a Business Tool
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to increase familiarity with formulas and calculations
most frequently used in business. Participants will learn to apply various ratios to
test a company's strength, use statistical tools to read results more accurately,
forecast more reliably, and assess the viability of a project through break-even
analysis.

MGMT 258 How to Analyze the Competition
Term Prerequisite: None
Semester Prerequisite: None
This course will enable students to pinpoint competitors' strengths and weak-
nesses so students can identify and act upon competitive challenges before they
occur. The course assists students in the design, implementation, and manage-
ment of a competitor "intelligence" system.

MGMT 259 Psychology of Selling and Winning
Term Prerequisite: None
Semester Prerequisite: None
This course helps students realize their full potential for total success. It goes
beyond positive thinking or other motivational programs to offer the key that
unlocks inner power. It teaches participants what to do to become top profes-
sional salespeople and why they should do it in order to sell successfully.

MGMT 260 How to Keep Satisfied Customers
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to make the task of keeping customers satisfied an easier
one. The ultimate goal of this course is to help improve students' abilities to
communicate effectively with customers.

MGMT 261 Successful Marketing for Service Organizations
Term Prerequisite: None
Semester Prerequisite: None
This course will help students learn to create services for markets rather than
markets for services. It is designed for service company managers and others
who need to sharpen their competitive edge by using marketing concepts long
associated with manufactured goods.
MGMT 264 How to Write a Marketing Plan
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for small business owners, marketing managers, product managers, and others responsible for the creation of a marketing plan. The course instructs students how to plan all the vital elements to create a marketing plan that is right for their product line, department, or company.

MGMT 265 Using Microcomputers in Marketing
Term Prerequisite: None
Semester Prerequisite: None
This level I course is a practical, hands-on course that helps make the job of choosing and using the software you need, easy and efficient. It is designed for marketing managers who want to use microcomputers to solve tough marketing problems. The course does not use interactive computer activity.

MGMT 270 Time and Stress Management
Term Prerequisite: None
Semester Prerequisite: None
This course covers principles of time management, as applied to both personal and professional situations. Learners will also become aware of positive and negative stress, relaxation techniques, and ways to reduce stress through changes in lifestyle.

MGMT 271 Managing and Resolving Conflict
Term Prerequisite: None
Semester Prerequisite: None
In this course you will learn about the practical knowledge, proven techniques and psychological insights needed to resolve conflicts successfully. By using case studies, critical incidents, and realistic examples of conflict resolution, you will learn these crucial skills.

MGMT 272 Success Through Assertiveness
Term Prerequisite: None
Semester Prerequisite: None
This course will help you in command of their career in order to respond to difficult situations according to individual desires, interests, and feelings. Participants will learn how being properly assertive at the right times and in the right places can help them achieve their goals.

MGMT 273 Understanding and Assessing Personal Interaction Skills
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to increase awareness of personal styles and preferences for interacting with others. It is also designed to heighten awareness of styles and preferences of people with whom the student interacts daily.

MGMT 274 Personal Financial Planning
Term Prerequisite: None
Semester Prerequisite: None
This course will show students how to start building financial security, it emphasizes spending strategies and capital-building techniques rather than housekeeping methods. Included is a computer template book to accompany Lotus 1-2-3 for student use during the course.

MGMT 275 How to Build Memory Skills
Term Prerequisite: None
Semester Prerequisite: None
This course uses audiotapes and a textbook to help 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.

MGMT 276 How to Improve Writing Skills
Term Prerequisite: None
Semester Prerequisite: None
This course helps students strengthen their ability to write and speak effectively. Learners will understand the proper use of words and phrases associated with business. Workbook practice and review exercises are provided.

MGMT 277 Speed Learning
Term Prerequisite: None
Semester Prerequisite: None
This course offers an entirely different way to read that reduces reading time while increasing comprehension. It teaches how to organize thinking systematically so the reader can learn quickly and efficiently in all reading situations. Uses audocassettes.

MGMT 280 Management Internship
Term Prerequisite: Coordinator Approval
Semester Prerequisite: Coordinator Approval
Internships provide students with actual job training and experience by working with business owners and/or managers in organizing and/or operating a business. Minimum of 150 hours of work required.

MGMT 300 Introduction to Management
Term Prerequisite: None
Semester Prerequisite: None
Explores the roles and functions of middle to upper level managers. Presents an overview and analysis of processes by which managers help organizations obtain their stated goals. Students apply managerial theories and skills to help them develop abilities in the areas of planning, communication, decision-making, change management, and ethics.

MGMT 301 Strategic Management and Policy
Term Prerequisite: MGT 300/BUS 225
Semester Prerequisite: MGMT 300/MGMT 225
The course pulls together learning from the areas of management and marketing to consider an overall organizational perspectivestrategic plan formulation and implementation for the whole organization. The process involves pursuing organizational mission while managing the relationship of the organization to its environment.

MGMT 304 Organizational Development
Term Prerequisite: None
Semester Prerequisite: None
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.

MGMT 309 Advanced Management Communication Skills
Term Prerequisite: None
Semester Prerequisite: None
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.

MGMT 332 Managerial Ethics
Term Prerequisite: None
Semester Prerequisite: None
Designed to sensitize participants to the impact of ethics on decision-making, both personal and organizational. Participants will examine the bases for the behavior of managers, their own behavior, various means of controlling organizational behavior, and the bases for ethical standards.

MGMT 335 Managerial Statistics
Term Prerequisite: MTH 122/Equivalent
Semester Prerequisite: MATH 062/Equivalent
Application of statistical tools and techniques to improve decision-making processes and reduce managerial decision difficulty from less-than-perfect data. Includes sampling, description of sample data, methods of averaging, standard deviation, probability theory, estimation, and hypothesis testing.

MGMT 337 Human Resource Management Skills
Term Prerequisite: None
Semester Prerequisite: None
Skill areas involved in the management of our 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.

MGMT 338 Current Topics in Management
Term Prerequisite: None
Semester Prerequisite: None
Study of specific topics and issues in today's society that affect managerial decisions. Students explore internal and external constraints on actions. External factors considered are legal, social, educational, and political. Special emphasis is given to international events impacting domestic management practices. Internal factors considered are shareholders, employees, and customers.

MGMT 339 Management Styles and Corporation Strategies
Term Prerequisite: None
Semester Prerequisite: None
Numerous current materials relating to management styles and corporation strategies in Japan will acquaint the student with management as practiced in Japan. Japanese management practices are presented as an alternative management style for the United States to explore. (This course is offered only as part of the Japan Adventure Program.)

MGMT 346 Managerial Finance
Term Prerequisite: ACC 101/ACC 213/Equivalent
Semester Prerequisite: ACCG 101/ACCG 213/Equivalent
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 financial planning, and managing the finance function.
MICR 203 Microbiology  
Term Prerequisite: 2.0 BIO 101/Equivalent  
Semester Prerequisite: BIOL, CHEM Recommended  
An introduction to bacteria, viruses, and parasitic organisms as they relate to human health. Emphasis on bacterial and viral structure and life cycles; antimicrobial therapy; immunology and host defenses; and the epidemiology, treatment, and prevention of selected infectious human diseases.

MICR 204 Microbiology Laboratory  
Term Prerequisite: PGY 212/Concurrently  
Semester Prerequisite: MICR 203 Concurrently  
Basic laboratory principles of microbiology for allied health students. Emphasis on microbiology, aseptic cultivation of microorganisms, differential staining, assays of entomical agents, and diagnostic laboratory techniques. Students will identify unknown bacterial species and examine medically important parasites.

MILS 101 The Military Profession  
Term Prerequisite: None  
Semester Prerequisite: None  
This course analyzes the military profession and organization of the U.S. Army from several academic perspectives and explores the technical, ethical, and personal ramifications of service as an officer in the U.S. Army. This course provides an introduction to military leadership which draws upon examples from military history.

MILS 102 Land Navigation  
Term Prerequisite: None  
Semester Prerequisite: None  
This course includes an overview and practical exercise in the use of military topographic maps. This includes reading map symbols; determining elevation and relief; measuring distance; and using the techniques of intersection, resection, modified resection, and polar coordinates to determine location. Lab includes land navigation exercises using a magnetic compass in a field environment.

MILS 201 Leadership Assessment Program: The Military Leader  
Term Prerequisite: None  
Semester Prerequisite: None  
This course examines individual leadership development using standardized assessment technology to evaluate potential to command and lead. Communications, administrative, personal relations and decision-making skills training, ethical career assessment, and sources of professional obligation will be reviewed. Lab includes rappelling and small bore rifle marksmanship.

MILS 202 Military First Aid, Leadership Assessment, Fitness Training  
Term Prerequisite: None  
Semester Prerequisite: None  
This course provides instruction in emergency first-aid techniques including casualty evaluation, life saving measures, CPR, and environmental injury prevention. It reviews the Army’s Physical Fitness Program, and individual and group fitness programs are introduced. Rappelling, individual/quad tactics, and field training exercises are provided. Lab includes leadership training.

MKTG 100 Current Issues in Business  
Term Prerequisite: None  
Semester Prerequisite: None  
This is an introductory course designed to enhance a student’s occupational preparedness and competence by promoting a better understanding of the competitive enterprise system. Classroom instruction will be combined with relevant marketing projects and professional community involvement to give students a solid foundation of marketing knowledge and managerial "know-how."

MKTG 119 Marketing and Managing Your Professional Image  
Term Prerequisite: None  
Semester 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.

MKTG 120 Sales  
Term Prerequisite: None  
Semester Prerequisite: None  
This course presents the fundamentals of sales and highlights its role in the marketing mix. Students will develop basic skills needed to enter the field. Topics include customer buying habits, the sales process, product demonstration techniques, and the analysis of human relations aspects of sales.

MKTG 121 Advanced Sales  
Term Prerequisite: MKT 120/Coordinator Approval  
Semester Prerequisite: MKTG 120/Departmental Approval  
An analysis of the sales interview. Student presentations are videotaped to assess individual skill levels, evaluate sales style and provide direction for improvement.

MKTG 122 Field Sales Internship  
Term Prerequisite: MKT 120/Departmental Approval  
Semester Prerequisite: MKTG 120/Departmental Approval  
Practical field sales experience working in consumer or industrial sales. Opportunity to develop advanced selling techniques and refine selling skills. Minimum of 160 hours of work required.

MKTG 123 Computer Field Sales Internship  
Term Prerequisite: Departmental Approval  
Semester Prerequisite: MKTG 120/Departmental Approval  
Practical computer field sales experience working in consumer or industrial sales. Opportunity to develop advanced selling techniques and refine selling skills. Minimum of 160 hours of work required.

MKTG 124 Practical Selling  
Term Prerequisite: Working in Sales  
Semester Prerequisite: Working in Sales  
This course is hands-on training helping students improve their sales technique and ultimately their earnings.

MKTG 130 Retailing  
Term Prerequisite: None  
Semester Prerequisite: None  
Students will gain understanding of activities and strategies used in selling goods to ultimate consumers. The course develops an awareness of problems facing retailers and explores feasible solutions. Career opportunities in retailing are explored.

MKTG 131 Fashion Merchandising  
Term Prerequisite: None  
Semester Prerequisite: None  
Functions and policies: what, when, where, how much, how to, and from whom to buy. Introduction to fashion history, textile construction, design, color, figure types, and fashion trends. Career opportunities are explored.

MKTG 135 Telemarketing  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed to make people more productive over the telephone. The course teaches skills to help increase productivity and sales by mastering the art of telephone selling. The course will demonstrate practical methods and alternatives that work to increase efficiency and closing percentages.

MKTG 140 Introduction to Advertising  
Term Prerequisite: None  
Semester Prerequisite: None  
Methods and techniques used in modern advertising. Information on the entire advertising function. Preparation of an advertising campaign will be required to facilitate hands-on understanding of the component parts which include marketing review, marketing plan, creative strategy, and media selection.

MKTG 200 Principles of Marketing  
Term Prerequisite: None  
Semester Prerequisite: None  
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.

MKTG 202 Managerial Marketing  
Term Prerequisite: MKTG 200  
Semester Prerequisite: MKTG 200  
The course focuses on the solution of marketing problems through case analysis. It relates marketing to the total enterprise by analyzing problems, and suggesting approaches to business decision-making. Particular attention is paid to the elements of the marketing mix and how marketing management deals with these variables.

MKTG 204 Marketing Research  
Term Prerequisite: MKTG 200  
Semester Prerequisite: MKTG 200  
Types of data, sampling, data collection, analysis, interpretation, and applications of marketing research. A practical managerial approach—not a statistical or mathematical orientation. Students will design and execute a marketing research project.

MKTG 220 Sales Management  
Term Prerequisite: MKTG 120/Equivalent  
Semester Prerequisite: MKTG 120/Equivalent  
Explores strategies used in managing salespeople. Training, recruiting, motivation, evaluation, planning, and organizing are all emphasized. The case method of learning is utilized, along with role-playing.
MKTG 221 Consumer Behavior 2
Term Prerequisite: None
Semester Prerequisite: None
Covers the basic perspectives involved in consumer motivation and decision-making. Students will investigate relevant variables that shape consumer actions and concepts that integrate the study of consumer behavior with the practice of marketing.

MKTG 231 Independent Study in Marketing 1
Term Prerequisite: Coordinator Approval
Semester Prerequisite: Coordinator Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 15 hours work is required.

MKTG 232 Independent Study in Marketing 2
Term Prerequisite: Coordinator Approval
Semester Prerequisite: Coordinator Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 32 hours work is required.

MKTG 233 Independent Study In Marketing 3
Term Prerequisite: Coordinator Approval
Semester Prerequisite: Coordinator Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 48 hours work is required.

MKTG 235 Marketing Internship 3
Term Prerequisite: Coordinator Approval
Semester Prerequisite: BLISS 118, MKTG 200, Coordinator Approval
Practical work experience in an approved business setting. Minimum of 160 hours work required.

MTEC 101 Basic Home Video 2
Term Prerequisite: None
Semester Prerequisite: None
An introductory course for non-majors designed to instruct the amateur camcorder user and semi-professional video camera operator in the techniques of producing effective video presentations. Students will learn how to incorporate professional video techniques into both home and business video programs.

MTEC 102 Old Time Radio 2
Term Prerequisite: None
Semester Prerequisite: None
A non-technical review for non-majors of the early days of radio in the United States. Consideration will be given to historical aspects of the medium such as network development, the emergence of personalities, and the popularity of various programs. Recordings of early presentations will be played in class.

MTEC 110 An Introduction to the Broadcast and Electronic Media 4
Term Prerequisite: None
Semester Prerequisite: None
A survey of the history, technology, regulation, economics, programming, and societal effects of the electronic media.

MTEC 120 Audio Production I 4
Term Prerequisite: None
Semester Prerequisite: None
A beginning course which covers the basics of audio theory and production techniques. Included are topics in tape editing, tape recorders, and audio mixing. This class provides the foundational theory for the other classes in the audio series.

MTEC 121 Audio Recording I 4
Term Prerequisite: MRT 120, Departmental Approval
Semester Prerequisite: MTEC 220
A beginning course in audio recording which covers the basic principles of multitrack recording, mixing console theory and operation, studio microphone techniques, and audio remote recording.

MTEC 122 Sound Reinforcement 4
Term Prerequisite: MRT 120, Departmental Approval
Semester Prerequisite: MTEC 220
A beginning course in sound reinforcement which covers the theory and practice of sound systems and components used for concert sound and other live reinforcement operations. Includes equipment specifications, system design, troubleshooting, and operation of live systems.

MTEC 130 Radio Production I 4
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the operational realities of commercial radio stations. Emphasis will be given to basic studio production and performance (on-air) techniques. Business, legal, and programming issues will be addressed.

MTEC 150 Visual Media Design 4
Term Prerequisite: MRT 150/Departmental Approval
Semester Prerequisite: Departmental Approval
This course places special emphasis on the components of effective visual communication. The development of pre-production processes related to visual composition, scriptwriting, storyboarding, lighting, and floor plot designs are emphasized. An introduction to studio and field production formats is included in classroom activities. Class sessions contain instructional and performance exercises.

MTEC 151 Electronic Field Production I 4
Term Prerequisite: MRT 152
Semester Prerequisite: MTEC 160
This course provides the student with an introduction to the process of single camera, remote video production. In addition, the course helps the student in developing an aesthetic reference for critiquing contemporary video programming. In-class assignments are evaluated using technical and artistic guidelines.

MTEC 220 Audio Production II 4
Term Prerequisite: MRT 120, Departmental Approval
Semester Prerequisite: MTEC 120
A second course in audio production providing advanced audio theory and production practice. Included are topics in tape editing of musical material, use of audio effects in production, additional production mixing, and an introduction to digital editing.

MTEC 221 Audio Recording II 4
Term Prerequisite: MRT 220, Departmental Approval
Semester Prerequisite: MTEC 121
A second course in audio recording that covers advanced techniques used in multi-track studio recording for music, film and video. Emphasis is on the use of the multi-track studio and signal processing equipment for multi-track overdub. Topics in acoustics, equipment alignment, and engineering skills are also included.

MTEC 223 Sound Reinforcement Practicum 1
Term Prerequisite: MRT 218, Departmental Approval
Semester Prerequisite: MTEC 122
A practical sound reinforcement activity combining specific theories related to the larger project with the opportunity to design, assemble, load, transport, erect, operate, and strike a large outdoor reinforcement system. Students operate the system to provide reinforcement for the bands that play in Riverfront Park on the Fourth of July.

MTEC 224 Audio Production III 3
Term Prerequisite: MRT 125, Departmental Approval
Semester Prerequisite: MTEC 220
An advanced production course emphasizing the use of digital audio editing techniques to produce or sweeten audio elements for video and other media. Projects will be produced at digital audio workstations. A course for Media Technology majors.

MTEC 227 Audio Recording III 3
Term Prerequisite: MRT 225, Departmental Approval
Semester Prerequisite: MTEC 221
A third course in audio recording that addresses topics in digital audio, MIDI control of synthesizers and applications involving SMPTE. Students work with computers and synthesizers to produce multi-track recordings.

MTEC 230 Radio Production II 4
Term Prerequisite: MRT 132, Departmental Approval
Semester Prerequisite: MTEC 130
Presentation of advanced studio and remote-production techniques. Emphasis on writing, producing, and performing for commercials, news, and sports programs.

MTEC 231 Radio Programming and Promotions 3
Term Prerequisite: MRT 132, Departmental Approval
Semester Prerequisite: MTEC 130
A survey of diverse radio formats. Consideration is given to the role of the program director and the tools used in format decision-making. Techniques used in creating and promoting station image and the effects of ratings are analyzed.

MTEC 232 Radio Workshop 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An opportunity for practical experience through access to the campus radio facility. Students work in a variety of on-air staff positions.

MTEC 240 Script and Copywriting for the Media 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: MTEC 110
Basic writing techniques and formats used in preparing program scripts for television, radio, and multi-media productions. Emphasis on practical copywriting techniques for commercial, promotion, public affairs, documentary, and entertainment programs.
MTEC 241 Reporting for Radio and Television 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: MTEC 120, MTEC 150, MTEC 151
Survey of the broadcast radio and television news industry. This course includes several practical exercises in preparing news stories through writing, production, and presentation.

MTEC 242 Media Sales and Marketing 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: MTEC 110
A presentation of the concepts and skills used in creating advertising campaigns and selling air time for cable and commercial television and radio operations.

MTEC 243 The Ethics and Social Impact of the Media 3
Term Prerequisite: None
Semester Prerequisite: None
An exploration of the effects upon society of electronic media programming. Issues such as the impact of television violence on children and the negative media portrayal of specific individuals and groups are considered.

MTEC 245 The Media Producer/Director 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: MTEC 190, MTEC 150
An in-depth examination of the roles the producer and director play in the creation of radio, television, video, and film programming. Special emphasis on the development of a program treatment, budget, and script. An overview of the programming and financial strategies a producer can use to obtain program funding.

MTEC 250 Television Studio Production 4
Term Prerequisite: MRT 152
Semester Prerequisite: MTEC 150
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.

MTEC 251 Electronic Field Production II 4
Term Prerequisite: MRT 250
Semester Prerequisite: MTEC 151
An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain 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.

MTEC 252 Lighting for Television and Video 3
Term Prerequisite: MRT 152, MRT 250
Semester Prerequisite: MTEC 150, Departmental Approval
An advanced instructional seminar on lighting techniques for video and television production. Special emphasis is placed on developing creative and technical lighting approaches applicable to a broad range of program subjects. In-class examples and assignments are used for developing individual lighting techniques.

MTEC 254 Electronic Presentational Graphics 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: MTEC 150, Departmental Approval
An introduction to the production of electronically generated visuals for use with video presentations. Computer and video hardware will be used to create desktop graphics and special effects as elements of television programs.

MTEC 290 Guided Independent Study 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration.

MTEC 295 Media Practicum 4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An opportunity to gain practical production experience in the media. Students are assigned to work on various audio, video, radio, and television projects within the Media Department. Faculty guidance and evaluation are an integral part of the experience. Practicum is intended only for advanced media technology students.

MTEC 296 Media Internship 4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An opportunity for students to work in external media settings under professional supervision. Students work closely with faculty in arranging and evaluating the work experience. Interview results determine intern placement. The internship is intended only for media technology majors who have completed at least 75% of their academic programs.

MTEC 299 Special Projects 4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An opportunity for students to work closely with faculty in the design and development of media-based programs to be used by departments or divisions within the College.

MUSC 101 Lansingers Vocal Ensemble 1
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
The purpose of Lansingers, a vocal jazz ensemble, is to develop artistic and creative vocal jazz skills for ensemble performance. Advanced solo experience, microphone techniques, and vocal improvisational skills will be developed. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 102 Women's Chorus 1
Term Prerequisite: None
Semester Prerequisite: None
An ensemble of women vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This group performs two to four concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 108 Concert Choir 1
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
A select group of singers who perform a wide range of music, sacred and secular. This group performs two to four concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 113 Musical Performance 1
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
An ensemble/company of performers composed of students and community members, providing musical theater experience culminating in a live performance. Members are selected for their acting as well as singing ability and past performance experience. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 119 Lansing Concert Band 1
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
A community band serving as the official band of the City of Lansing. The group holds at least fifteen concerts throughout the year, playing all types of music but concentrating mainly on traditional concert band literature. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 123 Jazz Ensemble 1
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
The jazz ensemble will rehearse and perform pieces of various styles and from various periods in jazz and big band development. Improvisational skills will be taught and developed. The group performs two to four concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 124 Music Performance Workshop 2
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
A summer program for talented high school students to develop basic music skills in music theory, keyboard, and vocal skills. This course culminates in performance of a final recital. Students are required to attend live performances. Acceptance is by audition and interview only.

MUSC 127 Orientation to Music Performance 1
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is for high school students accepted into the dance or theater summer program. A survey of the basic skills used in music including elements of theory, use of keyboard, and use of voice. Students are required to attend live performances.
MUSC 133 Jazz Theory I
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This course is designed to acquaint students with basic jazz theoretical principles. Students will gain an understanding of chord symbols, scales and modes, chord-scale relationships, chord substitutions, and harmonization techniques. Students are required to attend live performances.

MUSC 138 Class Piano Major I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
The first in a series of a two, this course is designed to develop the practical keyboard skills used in a music career. Students will gain keyboard facility, skill in sight reading and the ability to transpose. This series does not teach classical piano performance. MUSC 138 will cover all major scales. Students are required to attend live performances.

MUSC 139 Class Piano Major II
Term Prerequisite: MUS 138
Semester Prerequisite: MUSC 138
Last in a series, this course will increase technical facility through playing more advanced scale patterns and minor scales in all forms. Students will gain skill in accompanying a melody using a variety of patterns. Students will learn to read open score and lead sheet using letter and numeral notation.

MUSC 144 Beginning Piano I
Term Prerequisite: None
Semester Prerequisite: None
Course assumes no prior music experience or knowledge. Students are introduced to the basic rudiments of playing piano. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords will be the focus for this course. May be taken up to three semesters for credit.

MUSC 145 Beginning Piano II
Term Prerequisite: MUS 144
Semester Prerequisite: MUSC 144
This course is designed to take the student to an intermediate level of playing. Smaller rhythmic subdivisions, more complex fingering patterns, and triad inversions are introduced and developed. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 146 Intermediate Piano I
Term Prerequisite: MUS 145
Semester Prerequisite: MUSC 145
The focus of this course is to develop a more individualized method of learning. Concepts such as phrasing and expression will be stressed. Students will also develop technical skills through the playing of scales and arpeggios. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 147 Intermediate Piano II
Term Prerequisite: Departmental Approval
Semester Prerequisite: MUSC 146
This class will culminate in performing (from a required list) a piece of music from memory. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 155 Class Voice Commercial I
Term Prerequisite: None
Semester Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 156 Class Voice Commercial II
Term Prerequisite: MUS 155
Semester Prerequisite: MUSC 155
The advanced course in a series of two, this course will refine techniques introduced in MUSC 155. Students will prepare a final public performance. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 168 Introduction to Musicianship I
Term Prerequisite: None
Semester Prerequisite: None
This is an introductory musicianship course designed to develop students' general listening skills, to further their understanding of notation, theory and theory fundamentals. MUSC 168 builds on materials covered in MUSC 166 and develops an awareness of chords and harmonic structures. Students are required to attend live performances.

MUSC 169 Introduction to Musicianship II
Term Prerequisite: MUS 168
Semester Prerequisite: MUSC 168
This course is for novice musicians to further their understanding of music notation and theory fundamentals. MUSC 169 builds on materials covered in MUSC 168 and develops an awareness of chords and harmonic structures. Students are required to attend live performances.

MUSC 173 Basic Musicianship I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course allows students to gain an understanding of theoretical music principles of harmony, form, and orchestration. MUSC 173 is the last in a sequence of two courses in music theory and ear-training as a freshman requirement for a four-year college music degree. Students are required to attend live performances.

MUSC 174 Basic Musicianship II
Term Prerequisite: MUS 173
Semester Prerequisite: MUSC 173
This course allows students to gain an understanding of theoretical music principles of harmony, form, and orchestration. MUSC 174 is the last in a sequence of two courses in music theory and ear-training as a freshman requirement for a four-year college music degree. Students are required to attend live performances.

MUSC 179 Class Voice Major I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to develop stage presence and train singers in the International Phonetic Alphabet. Focus is on the German and French languages. The performance of these languages and utilize the literature of major composers of German lieder and French chanson. Students are required to attend live performances.

MUSC 180 Class Voice Major II
Term Prerequisite: MUS 179
Semester Prerequisite: MUSC 179
This course continues to develop stage presence and use of the International Phonetic Alphabet. Focus is on the German and French languages. The performance of these languages and utilize the literature of major composers of German lieder and French chanson. Students are required to attend live performances.

MUSC 182 Class Voice I
Term Prerequisite: None
Semester Prerequisite: None
The first in a series of two courses for group and individual work on varied song literature. Emphasis placed on vocal techniques such as breathing, posture, diction, and tone production. Stage presence is also emphasized. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 183 Class Voice II
Term Prerequisite: MUS 182
Semester Prerequisite: MUSC 182
The advanced course in a series of two. This course will refine techniques, such as breathing, posture, diction, tone production, and stage presence, introduced in MUSC 182. Students are required to attend live performances. May be taken up to three semesters for credit.

MUSC 185 Music Reading I
Term Prerequisite: None
Semester Prerequisite: None
This course is for students with no previous music experience in ear-training to develop music reading skills through singing with solfège. Students are introduced to the principle of sight-reading and the fundamentals of melodic and rhythmic dictation. Students are required to attend live performances.

MUSC 186 Music Reading II
Term Prerequisite: MUS 185
Semester Prerequisite: MUSC 185
This course is designed to further develop skills in sight-reading and ear-training introduced in MUSC 185 using different clefs, duple singing, the minor mode, and harmonic progressions. Students are required to attend live performances.

MUSC 188 Guitar I
Term Prerequisite: None
Semester Prerequisite: None
This first in a series of two courses for beginners. Note reading, music theory, single-note melodies, and chord accompaniments are taught. Folk, Blues and classical traditions of the guitar are presented in addition to the introduction of "finger-style" and "flat-pick" techniques. Students must provide own guitar. Students are required to attend live performances.
MUSC 189 Guitar II
Term Prerequisite: MUS 188
Semester Prerequisite: MUSC 188
The last in a sequence of two courses for beginners. Note reading, music theory, single-note melody lead, and chord accompaniment are taught. This course builds on the cumulative material covered in MUSC 188. Student must provide own guitar. Students are required to attend live performances.

MUSC 199 Music Appreciation
Term Prerequisite: None
Semester Prerequisite: None
Designed for non-music majors, this course develops well-informed, focused listening. Students are acquainted with representative composers, compositions, and musical characteristics of a variety of style periods from early music through 20th century music. Students are required to attend live performances.

MUSC 200 Music Fundamentals for Elementary Classroom Teachers
Term Prerequisite: None
Semester Prerequisite: None
A mandatory course for elementary, special education, and early childhood majors, this course assumes little, if any, prior musical experience. The basic fundamentals of music are covered, in addition to a sampling of successful teaching methods for singing and focused listening. Performance skills are taught through the piano and recorder.

MUSC 201 Private Voice Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 202 Private Voice Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 203 Private Woodwind Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 204 Private Woodwind Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 205 Private Percussion Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 206 Private Percussion Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 207 Private Brass Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 208 Private Brass Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 209 Private Keyboard Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 40 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 210 Private Keyboard Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 211 Private Guitar Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 212 Private Guitar Major
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester junctures. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 213 Private Voice Non-Major
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 40 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 214 Private Voice Non-Major
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 60 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 217 Private Instrument Non-Major
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 40 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 218 Private Instrument Non-Major
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 60 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 220 Private Keyboard Non-Major
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 40 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.
MUSC 221 Private Keyboard Non-Major  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 60 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 223 Private Guitar Non-Major  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is a private lesson, 40 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 224 Private Guitar Non-Major  2
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
This course is a private lesson, 60 minutes per week, for non-majors. Only music, dance or theatre majors, or dual enrolled and special admissions high school students, are eligible to enroll. Students are required to attend live performances.

MUSC 227 Independent Study  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum with minimal faculty supervision. Students must submit written application detailing their projects for department approval. Students are required to attend live performances.

MUSC 229 Independent Study  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum with minimal faculty supervision. Students must submit written application detailing their projects for department approval. Students are required to attend live performances.

MUSC 230 Directed Independent Study  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum. Students must submit written application detailing their projects for department approval. Students are required to attend live performances.

MUSC 231 Directed Independent Study  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Advanced study in areas related to, but not taught in, the curriculum. Students must submit written application detailing their projects for department approval. Students are required to attend live performances.

MUSC 232 Music Seminar  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to assist the needs of students, and to enhance the curriculum and special interests for the community. Students are required to attend live performances.

MUSC 233 Music Seminar  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to meet the needs of students, and to enhance the curriculum and special needs for the community. Students are required to attend live performances.

MUSC 235 Harmonica I  1
Term Prerequisite: None
Semester Prerequisite: None
This is an introductory course that demonstrates the sound techniques employed in the mastery of the harmonica in the key of C. Emphasis is on Blues style of play. Student must provide own harmonica. Students are not required to read or learn to read music. Students are required to attend live performances.

MUSC 236 Harmonica II  1
Term Prerequisite: MUS 235
Semester Prerequisite: MUSC 235
As a sequel to MUSC 235, this course introduces Blues changes. The student will perform live Blues songs and develop the ability to improvise over standard Blues changes. Student must provide harmonica in the keys of C, A, and D. Students are not required to read music or learn to read music.

MUSC 240 Music History I  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students will be exposed to composers and musical characteristics of specific style periods starting with Greek and Romanesque and continuing through the Pre-Classic 18th century. A research project will be started, with completion during the second semester. Students are required to attend live performances.

MUSC 241 Music History II  3
Term Prerequisite: MUS 240
Semester Prerequisite: MUSC 240
Students will be exposed to composers and musical characteristics from the Classic style period through the 20th century. Research project (assigned in MUSC 240) will be due during the second semester. Students are required to attend live performances.

MUSC 244 Studio Production Commercial  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course, as an introduction to multi-channel recording techniques, covers equipment functions, separation techniques, basic tracks, overdubs, and the roles of musicians, producers, and engineers in the commercial recording field. The second half of the course consists of recording session observation in an off-campus recording studio. Students are required to attend live performances.

MUSC 245 Jazz History  2
Term Prerequisite: None
Semester Prerequisite: None
Students will be introduced to the origins and traditions of the music loosely categorized as "jazz." Musical styles influential in the development of jazz, such as stride, ragtime, New Orleans, Swing, Bebop, Avant-garde, and others, will be studied. Students are required to attend live performances.

MUSC 248 Rock History I - Blues to the British Invasion  2
Term Prerequisite: None
Semester Prerequisite: None
This course provides an overview to the elements of rock and roll and its origins. The student will be introduced to the major figures of rhythm and blues/easy rock and roll via their music. Students are required to attend live performances.

MUSC 249 Rock History II - From 1963 to Present  2
Term Prerequisite: None
Semester Prerequisite: None
Students will be introduced to the changes in pop music that have occurred since the early '60s. Developments in styles will be covered via examination of a variety of recordings from the early '60s to the present. Students are required to attend live performances.

MUSC 251 Blues History  2
Term Prerequisite: None
Semester Prerequisite: None
Students will be given an overview of the African-American music form known as the Blues. Using recordings of the musicians as the primary source, supplemented with reading materials, the student will become familiar with the stylistic variations of both regional styles and individual performers. Students are required to attend live performances.

MUSC 253 Business of Music  3
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the business aspects of the music industry. Areas covered include copyright, contracts, trademarks, publishing, recording and record company operations, personal managers, booking agents, concert promotions, and unions. Students are required to attend live performances.

MUSC 254 Band Management  2
Term Prerequisite: MUS 253/Approval
Semester Prerequisite: MUSC 253/Approval
This course is designed to assist the professional musician or manager in creating or improving a performing band. All major aspects of band management are covered, including 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.

MUSC 270 Rock Guitar I  1
Term Prerequisite: None
Semester Prerequisite: None
A presentation on fundamental rhythm and lead guitar techniques and music theory concepts applicable to rock music from its Rhythm and Blues origin to the present, as well as other related popular styles. Student must provide own guitar. Students are required to attend live performances.
MUSC 271 Rock Guitar I
Term Prerequisite: MUSC 270
Semester Prerequisite: MUSC 270
Course emphasizes application, review, and further assimilation of the guitar techniques and music theory concepts covered in MUSC 270. Progressively more advanced chord and scale forms will be covered. Students are encouraged to begin developing improvisational skills essential to most rock and popular music styles. Student must provide guitar.

MUSC 273 Advanced Musicianship I
Term Prerequisite: MUSC 175
Semester Prerequisite: MUSC 174
This course allows students to gain an understanding of theoretical music principles of related chords and analytic techniques with regard to period style. This course is the first in a two course music theory and ear-training sequence as a sophomore requirement for a four-year college music degree. Students are required to attend live performances.

MUSC 274 Advanced Musicianship II
Term Prerequisite: MUSC 176
Semester Prerequisite: MUSC 273
This course allows students to further their understanding of theoretical music principles and analytic techniques through the twentieth century. This course is the second in a two course music theory and ear-training sequence as a sophomore requirement for a four-year college music degree. Students are required to attend live performances.

MUSC 276 Lyric Writing
Term Prerequisite: None
Semester Prerequisite: None
This course introduces students to the craft of writing song lyrics. The work of professional songwriters as well as the students' work will be examined and discussed. Students are required to attend live performances.

MUSC 278 Rock Percussion
Term Prerequisite: None
Semester Prerequisite: None
This course allows students to gain an understanding of rock music rhythms and concepts of notation and rudiments through an emphasis on progressive work in percussion techniques. MUSC 278 will demonstrate prevailing performance practices on a drum set. Students are required to attend live performances.

MUSC 279 Advanced Rock Percussion
Term Prerequisite: MUSC 280/Approval
Semester Prerequisite: MUSC 278/Approval
This course allows students to further their understanding of drum set percussion techniques, rock rhythms, and concepts learned in MUSC 278. Students will experience a wide range of percussion instruments and their applications to rock, pop, and jazz. Students are required to attend live performances.

MUSC 280 Private Songwriting
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Private coaching for music majors, 40 minutes per week in writing and copyrighting music compositions, giving attention and suggestion in harmony, chord substitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 281 Private Songwriting
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Private coaching for music majors, 60 minutes per week in writing and copyrighting music compositions, giving attention and suggestion in harmony, chord substitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit.

MUSC 282 Private Voice Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 40 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 283 Private Voice Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 60 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 284 Private Instrument Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 40 minutes per week, for commercial music majors, emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 285 Private Instrument Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 60 minutes per week, for commercial music majors, emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 286 Private Keyboard Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 40 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 287 Private Keyboard Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 60 minutes per week, for commercial music majors emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 288 Private Guitar Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 40 minutes per week, for commercial music majors, emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 289 Private Guitar Commercial
Term Prerequisite: Audition Approval
Semester Prerequisite: Audition Approval
Private lesson, 60 minutes per week, for commercial music majors, emphasizing techniques and style specifically related to commercial music. Enrollment is by audition only. Auditions held the Friday prior to fall semester or as requested during fall and spring semester juries. May be taken up to six semesters for credit.

MUSC 297 Synthesizers and Computer Music I
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This course introduces students to the role of computers in the music discipline. Topics include historical overview, sound synthesis techniques, synthesis hardware and signal processing, computer-assisted analysis, and instruction on DEC VAX 11/780, IBM personal computers, and a digital synthesizer. Students are required to attend live performances.

MUSC 298 Synthesizers and Computer Music II
Term Prerequisite: MUSC 297
Semester Prerequisite: MUSC 297
This course allows students to further their understanding of sound synthesis techniques using a personal computer and a digital synthesizer. This course is an extension of MUSC 297 with emphasis on advanced synthesis techniques, performance, and composition. Students are required to attend live performances.

NSCI 110 Science Discovery: A Process
Term Prerequisite: None
Semester Prerequisite: None
Emphasizes reducing anxiety and improving reasoning skills necessary for participation in science courses. Methods to identify and reduce science anxiety associated with science topics are presented. Science reasoning skills will be inventoried, including: observation, experimental techniques, critical thinking, and communication.
NSCI 121 Integrated Natural Science I
Term Prerequisite: Science Inventory Passed, MTH 009
Semester Prerequisite: Science Inventory Passed, MATH 060
The first of two general science courses focusing on important scientific discoveries and revolutions in their cultural and historical environment. Science processes, methods, and reasoning skills are emphasized throughout. NSCI 121 includes the period from 200 B.C. to 1900. Recommended for education majors.

NSCI 122 Integrated Natural Science II
Term Prerequisite: NS 111
Semester Prerequisite: NSCI 121
The second of two general science courses focusing on important scientific discoveries and revolutions in their cultural and historical environment. Science processes, methods, and reasoning skills are emphasized throughout. NSCI 122 includes the period from late 1800s to present. Recommended for education majors.

NSCI 131 Natural Science I: The Science of the Water Planet
Term Prerequisite: NS 110, Science Inventory Passed, 2.0 in MTH 060
Semester Prerequisite: Science Inventory Passed, MATH 060
A general education course designed to provide students with a basic understanding of the methods and applications of science. Topics include basic chemistry, thermodynamics, the hydrologic cycle, climate, and weather. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics.

NSCI 132 Natural Science II: Life on the Water Planet
Term Prerequisite: 2.0 Minimum in NS 121, NS 122
Semester Prerequisite: 2.0 Minimum in NSCI 131
This course builds upon NSCI 131. Topics include ecosystems, population dynamics, evolution and origins, plate tectonics, and human interactions with the earth as a sustainable system. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics.

NURS 101 Nursing Directed Study I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course consists of 16 hours of directed study in selected nursing content.

NURS 102 Nursing Directed Study II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course consists of 32 hours of directed study in selected nursing content.

NURS 103 Nursing Directed Study III
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course includes 24-72 hours of directed study in selected nursing content. May include classroom, campus lab, and/or clinical lab.

NURS 104 Nursing Directed Study IV
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is made up of 64-128 hours of directed study in selected nursing content. May include study in the classroom, campus lab, or clinical lab.

NURS 120 Nursing Process I: Introduction to Nursing
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
The nursing process is presented as a critical thinking/problem-solving technique to provide health care. Assessment skills and therapeutic communication skills are presented. The scope of nursing practice is defined, specifically legal, ethical, and professional considerations. The processes of aging and grieving emphasized. Clinicals in nursing homes and extended care facilities.

NURS 130 Nursing Process II: Common Acute Health Problems
Term Prerequisite: NUR 123, PGY 212
Semester Prerequisite: Admission to Program
Students are assisted in using the nursing process in the care of adults adapting to common acute health problems. Pathophysiology and nursing interventions affecting the cardiovascular, respiratory, endocrine, gastrointestinal, neurological, and musculoskeletal body systems are presented. Clinical in acute care hospital systems.

NURS 140 Nursing Process III: Maternal-Child Health
Term Prerequisite: NUR 124, PSY 205
Semester Prerequisite: Admission to Program, NURS 130
The concepts of parenting, cultural diversity, and human sexuality are discussed within the context of family dynamics. Assessment and care of the newborn is also presented. Basic needs and developmental tasks of early childhood through adolescence are discussed. Clinicals in maternal-child and pediatric units of acute care hospital systems.

NURS 145 Practical Nursing Role
Term Prerequisite: NUR 124
Semester Prerequisite: NURS 120-123
Examines the role of the practical nurse, ethical and legal dimensions of practice, professional organizations, differentiated practice, nursing issues, role transition, and preparation for employment. Required to be eligible for NCLEX-PN (National Council Licensing Examination-Practical Nurse).

NURS 200 Pharmacology
Term Prerequisite: Admission to Nursing Program, PSY 212
Semester Prerequisite: PHGY 202
This course is recommended for students who wish to transfer to a BSN program. Pharmacological agents are discussed in depth as well as nursing responsibilities associated with medication administration. Students are expected to calculate drug dosages.

NURS 210 LPN-RN Transition
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Introduces the returning licensed Practical Nurse (LPN) to the nursing process, patient records, role transition, and curriculum concepts. Assessment and evaluation of nursing skills will be done.

NURS 220 Nursing Process IV: Family Health
Term Prerequisite: Completed Practical Nursing Program
Semester Prerequisite: Admission to Program, NURS 140
The student is expected to use the nursing process in caring for clients adapting to psychosocial health problems, maternal-child health problems, and children with chronic illnesses. Clinics in psychiatric, maternal-child, and pediatric units of acute care hospitals and home health care systems.

NURS 230 Nursing Process V: Chronic and Critical Health Problems
Term Prerequisite: NUR 222
Semester Prerequisite: Admission to Program, NURS 220
The student is expected to use the nursing process in caring for adult clients adapting to critical and chronic health problems. Homeostatic changes in the neurological, cardiovascular, and respiratory systems are discussed, as well as fluid-electrolyte and acid-base imbalance. Clinics in acute care hospitals, nursing homes, and home health care agencies.

NURS 240 Nursing Process VI: ADN as Provider and Manager of Care
Term Prerequisite: NUR 222
Semester Prerequisite: Admission to Program, NURS 220
The role of the nurse as manager of care and the role of the associate degree nurse within the discipline of nursing are presented. Students are expected to use the nursing process with various management systems within a health care system. Clinics in acute care hospitals and nursing homes.

OADM 010 Keyboarding
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for students having no previous typing experience. Basic keyboarding skills using the touch method for the typist are developed. Emphasis is on speed and accuracy using the alphabetic keyboard, the figure keys, and symbol keys. Skill level of 35 wpm is required.

OADM 011 Office Skills Training
Term Prerequisite: None
Semester Prerequisite: None
This course consists of three sessions: (1) basic word processing; (2) principles of effective letter writing, and (3) records management, including creation, protection, storage, and disposition of business records.

OADM 100 College Typing I
Term Prerequisite: Keyboarding Experience
Semester Prerequisite: OADM 010/Placement Test
In addition to building speed and accuracy developed in keyboarding, this course emphasizes formatting for personal letters and envelopes, post cards, basic business letters and envelopes, memorandums, unbound reports, and tabulated material.

OADM 101 College Typing II
Term Prerequisite: BUS 100
Semester Prerequisite: OADM 100/Placement Test
In addition to building speed and accuracy developed in Typing I, this course emphasizes formatting additional letter parts, memorandums, form letters, complex tables, long reports, business forms, administrative communications, employment communications, and simulations.

OADM 102 Proofreading
Term Prerequisite: None
Semester Prerequisite: None
The course is designed to teach proofreading and editing skills essential to the production of accurate and coherent business communications.
OADM 103 Business Research Report Writing
Term Prerequisite: None
Semester Prerequisite: None
This course emphasizes the use of reports in the business environment and the steps necessary to create effective reports. Included in the course is the study of the nature of research, conducting research using primary and secondary sources, and writing an entire report with business applications.

OADM 104 College Gregg Shorthand I
Term Prerequisite: Typing Ability
Semester Prerequisite: OADM 010/Placement Test
This course teaches the principles of Gregg shorthand and basic business vocabulary and is offered for students who have had no previous Gregg shorthand experience. A minimum performance level of 60 wpm for two minutes at 96 percent accuracy is required before advancing to Shorthand II.

OADM 105 College Gregg Shorthand II
Term Prerequisite: BUS 104
Semester Prerequisite: OADM 104/Equivalent
This course emphasizes skills developed in Shorthand I in addition to developing greater ability in taking and transcribing dictation. Minimum level is 80 wpm for two minutes at 98 percent accuracy.

OADM 107 Business Calculating Machines
Term Prerequisite: BUS 117/Previous Math
Semester Prerequisite: OADM 117/Previous Math
This course utilizes the 10-key adding machine, calculator, and electronic printing calculators, operations of addition, subtraction, multiplication, and division; plus business-type problems dealing in percentages, interest, etc.

OADM 114 College Speedwriting
Term Prerequisite: Typing Ability
Semester Prerequisite: OADM 010/Placement Test
Students will learn an alphabetic shorthand. The minimum performance level for dictation and transcription is 70 wpm for three minutes at 96 percent accuracy.

OADM 117 College Business Math
Term Prerequisite: MTH/Placement Test
Semester Prerequisite: MATH 040/Placement Test
This course is offered in a classroom or self-paced laboratory format. The content covers basic math functions such as decimals, fractions, pre-algebra; and business transactions such as financial statements, finance charges, markups/markdowns, payroll, taxes, inventory, depreciation, installment buying charges, payroll, and annuities.

OADM 121 College Typewriting Skillbuilding
Term Prerequisite: Previous Typing
Semester Prerequisite: Previous Typing
This course is designed to develop speed and accuracy at the typewriter. The diagnostic approach is used to individualize the development of speed and accuracy for each student. Once problem areas are identified, specific drills are implemented to correct weaknesses.

OADM 122 Records and Information Forms and Documents Management
Term Prerequisite: None
Semester Prerequisite: None
This course emphasizes the management of documents (both organizationally internal and external), forms, correspondence, and reports. Management of both paper- and electronic-based forms and documents will include the design, analysis, usage, retention, and disposal procedures for manual and electronic records systems.

OADM 125 Business English
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to review all parts of grammar, punctuation, and sentence structure. There will be special emphasis on usage of rules covering proper usage of punctuation, capitalization, possessives, number usage, plurals, and mechanics for written business communication. Business English is required for machine transcription and word processing.

OADM 195 Human Behavior in the Workplace
Term Prerequisite: None
Semester Prerequisite: None
This course emphasizes the importance of the skill of human relations in the workplace. Through a combination of case studies, self-analysis exercises, and discussion, students become more aware of the impact of positive interactions at work. Proficiency in enhancing good human relations and in handling difficult situations is stressed.

OADM 198 Medical Record Management
Term Prerequisite: None
Semester Prerequisite: None
This course is a concentrated study of the health-care providers, control reimbursement, legal, and quality assurance systems which affect the maintenance of the medical record in various health-care delivery settings.

OADM 199 Medical Vocabulary
Term Prerequisite: None
Semester Prerequisite: None
This course provides instruction in spelling, definition structure, and concepts of medical terminology using a body-systems approach.

OADM 200 Critical Thinking
Term Prerequisite: None
Semester Prerequisite: None
Critical thinking is designed to provide basic and higher-order thinking skills including reasoning, creative thinking, decision-making, and problem-solving. Emphasis is placed on gaining proficiency in critical awareness to enable students to confidently appraise and discriminate information, problems, issues, etc., whether in a societal, educational, or organizational setting.

OADM 203 Professional Office Procedures
Term Prerequisite: None
Semester Prerequisite: None
The topics of this course include ergonomics, telephone techniques, handling incoming and outgoing mail, writing certain office documents such as minutes and reports, planning meetings and travel arrangements, and managing office finances. Computer usage may be emphasized.

OADM 204 Business Communications
Term Prerequisite: BUS 125
Semester Prerequisite: OADM 125/WRT 119
This course emphasizes competent writing in business through learning appropriate business writing style. Emphasis is placed on tone, clarity, conciseness, and completeness. Sentence structure and appropriate paragraphing are stressed for effective total messages. Students practice writing routine, information, persuasive, and employment-related communications.

OADM 206 Legal Vocabulary and Forms Preparation
Term Prerequisite: None
Semester Prerequisite: None
This course utilizes basic legal terminology in general and specialized areas of law. It defines legal terms and their use in legal context and stresses forms preparation.

OADM 215 Records and Information Management I
Term Prerequisite: None
Semester Prerequisite: None
This course includes managing the creation, protection, storage, and disposition of business records; alphabetic indexing; the foundation of other storage methods; selection of proper equipment; and procedures for the operation and control of filing methods and systems.

OADM 218 Records and Information Management II
Term Prerequisite: BUS 215
Semester Prerequisite: OADM 215
This course will familiarize students with the aspects of micrographics and the study of planning, organizing, and controlling records and information management systems as it pertains to records management and information control.

OADM 220 Administrative Office Management
Term Prerequisite: None
Semester Prerequisite: None
This course emphasizes the principles of office management and the role of an office as a service center. Office functions, structure and design, workflow, procedures, job analysis, and issues relating to human resources are covered.

OADM 230 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Classroom instruction is given on special topics of current interest to office personnel. Topics for each seminar vary.

OADM 231 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Classroom instruction is given on special topics of current interest to office personnel. Topics for each seminar vary.

OADM 232 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Classroom instruction is given on special topics of current interest to office personnel. Topics for each seminar vary.

OADM 233 Professional Secretary Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminars in the professional secretarial series prepare employed secretaries and students nearing the end of their course of study for the certified professional secretary and the professional legal secretary examinations. Topics for each seminar vary.
OADM 234  Professional Secretary Seminar  .75
Term Prerequisite: None
Semester Prerequisite: None
Semester Prerequisite: None
Semester Prerequisite: None
Semester Prerequisite: None
Semester Prerequisite: None
Seminar in the professional secretary series prepare employed secretaries and
students nearing the end of their course of study for the certified professional
secretary and the professional legal secretary examinations. Topics for each
Seminar vary.

OADM 235  Professional Secretary Seminar  1
Term Prerequisite: None
Semester Prerequisite: None
Seminar in the professional secretary series prepare employed secretaries and
students nearing the end of their course of study for the certified professional
secretary and the professional legal secretary examinations. Topics for each
Seminar vary.

OADM 238  Seminar: Special Subjects  1
Term Prerequisite: None
Classroom instruction is given for local corporations on special topics of current
interest. Topics for each Seminar vary.

OADM 240  Office Internship  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course is designed to provide on-the-job training relating to an office admin-
istration major. Placement is made in an approved training center to earn credits
for satisfactory work performance and to earn wages for work performed.
Volunteer work may be substituted for earning wages. Minimum of 100 hours work
is required.

OADM 275  Understanding Cultural Differences  3
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to help students become familiar with, understand,
and appreciate people from different cultures to promote a more effective basis for
working together in the business world. Emphasis and application is placed upon
business etiquette and business practices as they differ in various cultures.

OCNL 225  Basic Oceanology and Limnology  3
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the physical and chemical properties of aquatic science.
Topics include: waves, currents, tides, geology of the ocean and lake basins,
marine and fresh water biology, and man's interactions with natural waters.
Laboratory and field activities emphasize basic concepts of aquatic science.

OEDC 110  Seminar: Wilderness Survival Techniques  3
Term Prerequisite: None
Semester Prerequisite: None
This course provides basic outdoor survival skills and techniques to campers,
outdoor enthusiasts, and group leaders. Among the topics are shelter, fire,
water, signals, orienteering, food procurement, hot/cold stress management,
toxic bites, edible plants of the world, and survival at sea. Optional three day
field trip exercise.

OEDC 111  Seminar: Wild Food Plants  3
Term Prerequisite: None
Semester Prerequisite: None
This course introduces 77 kinds of edible wild plants and their toxic look-a-likes
from Michigan and adjoining states. The students learn to distinguish those
plants on the basis of observed plant characteristics. The material is illustrated in
slides and handouts. Several outdoor experiences are provided. Conservation
stressed.

PARA 200  Paramedic Directed Study  3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course provides selection of content from the Paramedic curriculum to
update background current knowledge and skill for returning students and health
care professionals. Through evaluation of previous learning, examinations, self
study, and scheduling into needed lectures and labs students are advanced
placed or re-admitted into the Paramedic program.

PARA 221  Medical Trauma I  5
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course builds on previous knowledge acquired as Basic EMT. Provides
theoretical background material for management of prehospital emergencies.
Course includes roles and responsibilities, anatomy/physiology, airway mainte-
nance, pain control, assessment and management of respiratory, mater-
nal, neonatal, and pediatric emergencies.

PARA 222  Medical Trauma II  5
Term Prerequisite: ESA 221
Semester Prerequisite: PARA 221
PARA 222 incorporates previous knowledge of Basic EMT and PARA 221.
Provides theoretical background material for management of prehospital emer-
gencies including assessment and management of neurological, behavioral,
abdominal, metabolic, genitac, and multiple trauma patients. The principles of
triage, management of mass casualty incidents, and telecommunication are also
included.

PARA 231  Cardiology I  3
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This is a course to enable paramedic students to read EKG rhythm strips. It will
give them background and understanding of the anatomy, physiology, electro-
physiology, and pathophysiology of the heart and cardiovascular system. Much
emphasis will be placed on arrhythmia interpretation, treatment modalities, and
patient management.

PARA 232  Cardiology II  3
Term Prerequisite: ESA 231
Semester Prerequisite: PARA 231
This course utilizes information learned in PARA 231 as a basis for more
advanced arrhythmia interpretation. Management of cardiac arrest including
medications, cardioversion, and defibrillation will be a major emphasis.
Pacemakers, other advanced procedures, and arrhythmia will be presented.
Application of information, judgement and decision-making are evaluated.

PARA 241  Pharmacology I  2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This is the first course in a two-course sequence. It is designed to give the
student background information necessary for the preparation and administration of
medications in the field. ACLS drugs will be covered in depth.

PARA 242  Pharmacology II  2
Term Prerequisite: ESA 241
Semester Prerequisite: PARA 241
This is the second course in a two-course sequence. In-depth information on
ACLS drugs will be covered. Common drugs that paramedics administer in the
field will also be covered. Drug classification, action, use, and side effects are
included.

PARA 251  Skills I  2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Skills I will introduce and evaluate competency of most manual skills required in
a paramedic curriculum. These skills will be demonstrated and supervised dur-
ing practice. It is necessary that the student have adequate basic EMT skills
upon entry, as these will be updated and tested.

PARA 252  Skills II  2
Term Prerequisite: ESA 251
Semester Prerequisite: PARA 251
This course is a continuation of Skills I with similar demonstration/practice for-
mall. Several new competencies will be introduced. Measurement criteria for
Skills I competencies become more stringent. Although geared to field setting,
some skills necessary for hospital practice included. ACLS certification will be
completed.

PARA 261  Clinical I  5
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
This course provides clinical time for paramedic students in the first term. Time
will be spent in nursing homes, hospitals including ED, CCU, ICU, Burn Unit,
and OB. Time will also be spent in simulations on campus and designated EMS
departments under licensed paramedics.

PARA 282  Clinical II  5
Term Prerequisite: ESA 281
Semester Prerequisite: PARA 281
This course provides clinical time for paramedic students in the second term.
Time will be spent in hospitals, including ED, CCU, ICU, Burn Unit, OB, Peds,
Psych Unit, OR, and Morgue. Time will also be spent in simulations on campus
and designated EMS departments under licensed paramedics.

PEEA 103  Athletic Training I  2
Term Prerequisite: None
Semester Prerequisite: None
This course is an overview of injury prevention and care techniques, first-aid
principles, and equipment and facilities. Other course topics covered are taping
procedures and their legal implications for the athletic trainer.

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term Prerequisite</th>
<th>Semester Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEAA 104</td>
<td>Athletic Training II</td>
<td>None</td>
<td>None</td>
<td>This course will complement the skills and knowledge acquired in Athletic Training. Course emphasis will be placed on injury assessment, injury treatment, and further rehabilitation skills as they relate to athletic injury.</td>
</tr>
<tr>
<td>PEAA 107</td>
<td>Officiating Basketball</td>
<td>None</td>
<td>None</td>
<td>This course is an officiating mechanics class for students wishing to officiate basketball at the high school and college level. Proper court positioning, arm signals, and whistle use are topics covered.</td>
</tr>
<tr>
<td>PEAA 110</td>
<td>Coaching Basketball</td>
<td>None</td>
<td>None</td>
<td>This course is designed to prepare the student for coaching the technical aspects of basketball as well as to enhance the student’s knowledge of the duties, roles, and responsibilities of the coach. Material will apply to all levels of competition with emphasis placed on high school and college levels.</td>
</tr>
<tr>
<td>PEAA 111</td>
<td>Coaching Volleyball</td>
<td>None</td>
<td>None</td>
<td>This course is designed to develop coaching skills in the areas of basic through advanced individual volleyball skills as well as team strategies. Teaching skill progressions and practice planning will be covered.</td>
</tr>
<tr>
<td>PEAA 112</td>
<td>Coaching Soccer</td>
<td>None</td>
<td>None</td>
<td>This course places emphasis on teaching the proper execution of the fundamental skills and components of soccer. Individual and team skills will be taught as well as skill progression.</td>
</tr>
<tr>
<td>PEAA 113</td>
<td>Rules of Golf</td>
<td>None</td>
<td>None</td>
<td>This course examines the rules of golf through the interpretations of the United States Golf Association’s decisions.</td>
</tr>
<tr>
<td>PEAA 114</td>
<td>Basic Lifeguarding</td>
<td>None</td>
<td>None</td>
<td>This course is designed to provide the necessary minimum skills of training to qualify for an entry level lifeguard.</td>
</tr>
<tr>
<td>PEAA 115</td>
<td>Lifeguard Training</td>
<td>None</td>
<td>None</td>
<td>This course is designed to provide the necessary minimum skills training for a person to qualify as a non-surf lifeguard.</td>
</tr>
<tr>
<td>PEAA 116</td>
<td>Water Safety Instruction</td>
<td>None</td>
<td>None</td>
<td>This course is designed to assist in teaching basic aquatic skills for instructors. Teaching modalities and how different students learn is covered.</td>
</tr>
<tr>
<td>PEAB 100</td>
<td>Total Fitness A</td>
<td>None</td>
<td>None</td>
<td>This course is a comprehensive fitness course with a view toward the whole person. Students will be given a fitness assessment, including aerobic capacity, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs.</td>
</tr>
<tr>
<td>PEAB 101</td>
<td>Total Fitness B</td>
<td>None</td>
<td>None</td>
<td>This course views the whole person’s fitness needs. Students will be given a fitness assessment, including aerobic capacity, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. Nutritional aspects of health will be discussed.</td>
</tr>
<tr>
<td>PEAB 102</td>
<td>Total Fitness C</td>
<td>None</td>
<td>None</td>
<td>This course is a comprehensive fitness course with a view of the whole person. Students will be given a fitness assessment, including aerobic capacity, body composition, circuit-training, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. Nutritional aspects of health will be discussed as well as stress reduction techniques.</td>
</tr>
<tr>
<td>PEAB 103</td>
<td>Total Fitness D</td>
<td>None</td>
<td>None</td>
<td>This course involves students in planning a fitness regimen. Students will be given a fitness assessment, including aerobic capacity, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. Nutritional aspects of health and stress reduction techniques will be discussed as part of daily lifestyles.</td>
</tr>
<tr>
<td>PEAB 105</td>
<td>Aerobic Walking</td>
<td>None</td>
<td>None</td>
<td>This course centers on improving one’s fitness level through outdoor walking at an individually determined speed. Students will also develop a personalized healthy lifestyle plan which incorporates exercise, diet, and stress management.</td>
</tr>
<tr>
<td>PEAB 107</td>
<td>Jogging: Beginning</td>
<td>None</td>
<td>None</td>
<td>This course introduces jogging as a fitness modality and covers how to care for feet, proper equipment choices, clothing, and safety.</td>
</tr>
<tr>
<td>PEAB 110</td>
<td>Fitness Maintenance</td>
<td>None</td>
<td>None</td>
<td>This course is for students with prior experience and knowledge in physical fitness-related activities and a desire to continue fitness maintenance.</td>
</tr>
<tr>
<td>PEAB 112</td>
<td>Body Flexibility</td>
<td>None</td>
<td>None</td>
<td>This course combines calisthenics and stretching. Students will use floor exercises to tone muscles and increase flexibility. Proper stretching techniques as well as which muscle groups are being worked will be examined.</td>
</tr>
<tr>
<td>PEAB 120</td>
<td>Aerobic Exercise</td>
<td>None</td>
<td>None</td>
<td>This course helps students to improve cardiovascular function and oxygen efficiency to enhance muscle structure and function through toning exercises, aerobic dancing, and stretching.</td>
</tr>
<tr>
<td>PEAB 121</td>
<td>Aerobic Maintenance</td>
<td>PEAB 105</td>
<td>None</td>
<td>This course is designed to increase aerobic capacity through progressive levels of time and intensity using low, moderate or high impact movement. All movements may be modified to the intensity level of the individual student.</td>
</tr>
<tr>
<td>PEAB 122</td>
<td>Triathlon Training</td>
<td>None</td>
<td>None</td>
<td>This course is designed to teach proper techniques in swimming, running, and bicycling. A vigorous training program is designed to challenge the student.</td>
</tr>
<tr>
<td>PEAB 123</td>
<td>ALPH A</td>
<td>None</td>
<td>None</td>
<td>Adopted Lifestyle and Physical Health Activities (ALPHA) incorporates weight training with several aerobic components to increase strength and aerobic capacity through circuit weight training.</td>
</tr>
<tr>
<td>PEAC 106</td>
<td>Bowling: Beginning</td>
<td>None</td>
<td>None</td>
<td>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.</td>
</tr>
<tr>
<td>PEAC 101</td>
<td>Bowling: Intermediate</td>
<td>None</td>
<td>None</td>
<td>This course develops further strategies in spot bowling, consistent ball release, and scoring strategies.</td>
</tr>
<tr>
<td>PEAC 102</td>
<td>Bowling: Advanced</td>
<td>PEC 128</td>
<td>None</td>
<td>This course is an extensive review of skills introduced at the beginning and intermediate level. Students develop strategies in lane reading.</td>
</tr>
</tbody>
</table>
PEAC 103  Golf: Beginning
Term Prerequisite: None
Semester 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.

PEAC 104  Golf: Advanced/Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course will provide continuation of the development of grip, stance, and club swing. Visualization and imagery will be introduced in relation to the golf swing.

PEAC 105  Golf: Intermediate
Term Prerequisite: None
Semester Prerequisite: PEAC 104
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 swinging mechanics for course play.

PEAC 106  Golf: Advanced
Term Prerequisite: PED 116
Semester Prerequisite: PEAC 105
This course is designed for the advanced player. Emphasis is placed on "course strategy" and the rules of golf.

PEAC 108  Pool: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces students to the fundamentals of pool (pocket billiards). Primary course emphasis is on stance, grip, bridge, aim, and stroke. Cue ball position shots such as spin, follow, draw, and center are covered.

PEAC 109  Pool: Intermediate
Term Prerequisite: PEC 106
Semester Prerequisite: PEAC 108
This course reviews the fundamentals of stance, grip, bridge, aim, and stroke. Skill improvement and concentration techniques are stressed.

PEAC 111  Table Tennis: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to table tennis as played by tournament players. Strokes covered include forehand and backhand topspin drives, pushes and blocks, and defensive strokes. Discussions will include the rules of table tennis tournaments.

PEAC 112  Table Tennis: Intermediate
Term Prerequisite: None
Semester Prerequisite: None
This course is an extension of the beginning course and provides more training in the basic strokes. More advanced strokes such as the loop and the flip are covered.

PEAC 113  Competitive Table Tennis
Term Prerequisite: PEC 113
Semester Prerequisite: PEAC 112
This course is offered for students who are considering participation in United States Table Tennis Association-sanctioned tournaments. Match play is stressed. Rules are discussed in detail and observed during practice. Footwork and service practice is strongly encouraged.

PEAC 115  Tennis: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the basic skills of tennis, including the backhand, the forehand, the serve, the rules, and scoring.

PEAC 116  Tennis: Intermediate
Term Prerequisite: None
Semester Prerequisite: None
This course will introduce the student to the lob, half volley and a number of different serves. The student should be able to demonstrate and execute the fundamentals of tennis: ground strokes, net volley, serve, and the knowledge of scoring the game.

PEAC 117  Tennis: Advanced
Term Prerequisite: None
Semester Prerequisite: None
This course deals with developing good ball control, court position, topspin shots, and serve/slide shots. Students should be able to execute and demonstrate the following tennis skills: solid ground strokes, net volleys, lobs, and good control of the serve.

PEAC 100  Bicycling/Touring
Term Prerequisite: None
Semester Prerequisite: None
This course deals with emergency repairs, proper fit of bicycle, good cycling techniques, and safe use of roads. Students are shown a variety of routes suitable for bicycling in the Lansing area.

PEAC 101  Bicycling Camping/Touring
Term Prerequisite: None
Semester Prerequisite: None
This course is a two-day, self-contained bicycle trip in a scenic area of Michigan. Participants carry on their bicycles all gear and items needed for the entire trip. Students will cycle 45-50 miles each day.

PEAC 104  Tai Chi I
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the first 30 forms of the Yang-style Tai Chi. Students develop techniques to focus on relaxation and inner calmness. Slow movements train the mind to be in better control of the body.

PEAC 105  Tai Chi II
Term Prerequisite: PEC 120
Semester Prerequisite: PEAC 104
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.

PEAC 107  Aikido
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to the philosophy of Aikido. Basic movements of Aikido as a martial art are introduced.

PEAC 108  Aikido Continuing
Term Prerequisite: PEC 126
Semester Prerequisite: PEAC 107
This course presents the 8th KYU forms through the 3rd KYU techniques. This course examines the philosophical underpinnings of Aikido.

PEAC 110  Yoga: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to yogic breathing and gentle yogic stretching exercises with emphasis in guided relaxation and meditation. Psycho-acoustic music is used to reduce stress and tension.

PEAC 111  Yoga: Continuing
Term Prerequisite: None
Semester Prerequisite: None
This course promotes psycho-physical integration of body and mind through yogic breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation.

PEAC 112  Yoga: Special
Term Prerequisite: None
Semester Prerequisite: None
This course teaches modified and adaptive yogic breathing and stretching exercises to enhance the body’s mobility of the movement-handicapped person. Feldenkrais audio and video instructional tapes are used to extend range of movement. Self-massage, guided relaxation, and meditation are used to reduce stress and tension as well as to enhance well-being.

PEAC 113  Parent/Infant Water Adjustment
Term Prerequisite: None
Semester Prerequisite: None
This course places emphasis on parent/infant water adjustment, safety and fun. Emphasis is placed on development of water experience and improvement of motor skills and coordination. (Infant ages between 6 mos. - 2 yrs.)

PEAC 114  Parent/Toddler Water Adjustment
Term Prerequisite: PEF 115
Semester Prerequisite: PEAC 113
This course places emphasis on parent/toddler water adjustment, skill development, safety and fun. Emphasis is on development of water experiences, improvement of motor development, coordination, and social skills. Toddlers should be 2-5 yrs. old, depending upon skill development and/or instructor approval.

PEAC 115  Parent/Child Swim
Term Prerequisite: PEF 121
Semester Prerequisite: PEAC 114
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 4-6 yrs. old and/or instructor’s approval.
PEAD 116 Parent/Child Gymnastics Tumbling I
Term Prerequisite: None
Semester Prerequisite: None
This course introduces basic tumbling skills to work toward greater motor skill development through tumbling, stretching, balancing skills, and controlled movement.

PEAD 117 Parent/Child Gymnastics Tumbling II
Term Prerequisite: PEH 103
Semester Prerequisite: PEAD 116
This course introduces children to elementary combinations of movements to enhance flexibility, strength, and coordination. Children learn balancing techniques and sequential movements on a low balance beam.

PEAD 120 Ice Skating
Term Prerequisite: None
Semester Prerequisite: None
This course acquaints students with ice skating as a leisure time activity. Points of emphasis in the course are proper fit and care of figure skating boots and blades, basic skating terminology and technique, and proper posture, and control on ice.

PEAD 121 Racewalk Technique
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to build one’s basic walking skills into a race-walking stride for fitness or racing.

PEAE 100 Basketball: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the fundamental skills of basketball. Course emphasis is placed on ball handling, passing, shooting, and rules.

PEAE 102 Basketball: Advanced
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for the student who has a sound understanding of basketball skills. Drills will be used to enhance passing and shooting skill development. Emphasis is placed on team play as well as individual skill improvement.

PEAE 103 Volleyball: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the fundamental skills of volleyball. Course emphasis is on proper serving, setting, forearm passing, spiking, positioning, rules, and game strategy.

PEAE 104 Volleyball: Intermediate
Term Prerequisite: PEE 124
Semester Prerequisite: PEAE 103
This course focuses on the development of proper serving, setting, forearm passing, and spiking skills. Game strategies and player positioning are taught in more detail.

PEAE 106 Competitive Volleyball
Term Prerequisite: PEE 126
Semester Prerequisite: PEAE 104
This course provides the student with a conceptual framework for advanced offensive and defensive systems of play. Individuals work on skill drills and intrac- class competition.

PEAE 107 Indoor Soccer
Term Prerequisite: None
Semester 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.

PEAE 110 Softball: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to the fundamental skills of softball. Course emphasis is on proper throwing, catching, fielding, and hitting procedures.

PEAE 115 Waterpolo
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to the basic skills of waterpolo. Students will work on passing, shooting, and dribbling skills which will then be integrated into a team concept.

PEAF 100 Swimming: Primary Skills
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on the development of basic swimming strokes, rhythmic breathing, survival swimming, and beginning diving skills.

PEAF 101 Swimming: Stroke Development
Term Prerequisite: PEF 100
Semester Prerequisite: PEAF 100
This course stresses development of skills in front crawl and backstroke. Students will be introduced to the elementary backstroke and breaststroke.

PEAF 102 Swimming: Stroke Refinement
Term Prerequisite: PEF 101
Semester Prerequisite: PEAF 101
This course builds upon the stroke development level skills. Skill development is placed on front crawl and rhythmic breathing, breaststroke, diving, and survival swimming skills. Emphasis is placed on polishing strokes and increasing swimming distances.

PEAF 104 Swimming/Training
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for competitive swimmers seeking a high level of swimming. Advanced swimming/training incorporates some dry land training and waterpolo.

PEAF 105 Advanced Swimming/Training
Term Prerequisite: None
Semester Prerequisite: None
This course is designed for competitive swimmers seeking a high level of swimming. Advanced swimming/training incorporates some dry land training and waterpolo.

PEAF 106 Water Walking/Toning
Term Prerequisite: None
Semester Prerequisite: None
This course utilizes a variety of walking moves in shallow water to enhance cardiovascular fitness. Toning exercises for arms, abdominals and thighs are used extensively.

PEAF 107 Water Exercise I
Term Prerequisite: None
Semester Prerequisite: None
This course utilizes stationary water exercises and water games to improve cardiovascular fitness and flexibility.

PEAF 108 Water Exercise II
Term Prerequisite: None
Semester Prerequisite: None
This course utilizes stationary water exercise and an introduction to swimming techniques to improve cardiovascular fitness. Wall exercises and water jugs are used to increase strength and flexibility.

PEAF 109 Water Exercise-Plus
Term Prerequisite: None
Semester Prerequisite: None
This course is an intensive water fitness exercise program designed to increase cardiovascular output and muscle strength. Students use water movements to increase flexibility and strength.

PEAF 110 Hydro-Fit Exercise I
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to give the student an overall water fitness workout with low impact to joints or back. The class is held in deep water while exercising with Hydro-Fit weights; participants must be comfortable in deep water.

PEAF 111 Hydro-Fit Exercise II
Term Prerequisite: PEF 110
Semester Prerequisite: PEAF 110
This course is a water fitness program using water resistance to tone, strengthen, develop coordination and increase flexibility by using Hydro-Fit exercise equipment. Emphasis is placed on increasing abdominal, shoulder/arm, and lower body strength.

PEAF 112 Scuba
Term Prerequisite: None
Semester Prerequisite: None
This course is a basic course in scuba diving. The course includes both classroom and pool training instruction. Upon successful completion of the course, the student is eligible for scuba certification following open water training.
PEAF 113 Scuba: Advanced
Term Prerequisite: PEF 109
Semester Prerequisite: PEAF 112
This course is designed for certified divers who wish to further their scuba diving skills and knowledge. Topics covered will include diving equipment, underwater navigation, stress and rescue, limited visibility and night diving, dry suit diving, and underwater photography. Certification as an advanced and/or specialty diver is available with optional open water training.

PEAG 100 Fencing: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to introduce the student to basic skills and theories in foil fencing. Course emphasis is placed on twelve basic skills: advance, retreat, lunge, disengage, coupe, one-two double, reposte, counter parry and reposte, and advance-lunge.

PEAG 101 Fencing: Intermediate
Term Prerequisite: PEG 103
Semester Prerequisite: PEAG 100
This course builds upon the twelve basic fencing skills and introduces rules and complex fencing movements. Students will use acquired skills in fencing bouts.

PEAG 102 Fencing: Advanced
Term Prerequisite: PEG 104
Semester Prerequisite: PEAG 101
This course reviews the basic skills of fencing and its rules. Students will be introduced to a sequence of fencing movements in foil fencing as well as limited use of Sabre and Epee.

PEAG 103 Judo: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to familiarize students with basic Judo techniques of falling, throwing and grappling.

PEAG 104 Judo: Intermediate
Term Prerequisite: None
Semester Prerequisite: None
This course works toward a series of sequential Judo movements with continued emphasis on throwing and grappling.

PEAG 105 Karate: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the basic skills of karate: kicking with the feet and hands and punching with the fist and hands.

PEAG 106 Karate: Intermediate
Term Prerequisite: None
Semester Prerequisite: None
This course further develops karate skills in punching with the fists and hands, kicking with feet and knees and essential body movement in combative activities with an emphasis on free sparring.

PEAG 107 Karate: Advanced
Term Prerequisite: PEG 110
Semester Prerequisite: PEAG 105
This course places primary emphasis on the development of sparring techniques as they relate to punching and kicking. Students spar and move toward the competitive aspect of Karate as a martial art.

PEAG 108 Weight Training: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to promote physical fitness through weight training. Instruction will include different principles, methods and techniques for progressive resistance training. Students will design a program of their choice with emphasis on weight reduction, muscle strengthening and body building with an aerobic component.

PEAG 109 Body Building: Introduction
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to introduce weight training and proper lifting techniques. Introduction to safety rules, proper use of machinery and concepts of lifting will be emphasized.

PEAG 110 Body Building: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course acquaints students with the beginning aspects of body structuring through the application of weights. Emphasis on weight reduction or increase in muscle size through an individualized training program is stressed.

PEAG 111 Body Building: Intermediate
Term Prerequisite: PEG 129
Semester Prerequisite: PEAG 109
This course expands the student's ability to use machines and free weights to increase variations and methods of lifting techniques. Students will also monitor food intake to provide information to assist with proper diet and nutritional needs.

PEAG 114 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Seminars are designed to meet specific community needs.

PEAG 116 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Seminars are designed to meet specific community needs.

PEAG 118 Seminar: Special Subjects
Term Prerequisite: None
Semester Prerequisite: None
Seminars are designed to meet specific community needs.

PEAI 201 Independent Study
Term Prerequisite: None
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation or athletics.

PEAI 202 Independent Study
Term Prerequisite: None
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation or athletics.

PEAI 203 Independent Study
Term Prerequisite: None
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation or athletics.

PEAI 204 Independent Study
Term Prerequisite: None
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation or athletics.

PEAI 105 Angling: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to the sport of angling with demonstrations of basic angling tackle and techniques. Information is provided on Michigan sport fish and their habitat. The class will take fishing trips for steelhead, walleye, salmon, trout and bass and other game fish.

PEAI 107 Angling: Advanced
Term Prerequisite: PEJ 101
Semester Prerequisite: PEAI 105
This course is designed to improve the angler's skills and knowledge of fish habitat. Many sophisticated angling techniques will be discussed. Weekly fishing trips for Michigan's premier gamefish are scheduled.

PEAI 115 Sailing: Beginning
Term Prerequisite: None
Semester Prerequisite: None
This course is an introduction to basic sailing on Lake Michigan. Students will become familiar with the parts and functions of a sailing vessel. Students will be taught rigging procedures, use of wind and other basic sailing functions.

PEAI 116 Basic Sailing/Cruising
Term Prerequisite: None
Semester Prerequisite: None
This course will help students gain first-hand experience in the art of sailing and seamanship. Students will attain confidence necessary to handle a cruising sailing vessel under various conditions which present themselves in the Great Lakes.

PEAI 117 Advanced Sailing
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to give the student an opportunity to experience a major voyage on the Great Lakes applying the terms and course objectives covered in the introductory cruising class. Major emphasis will be placed on advanced piloting and helmanship.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 191</td>
<td>Introduction to Biophysics</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>Term Prerequisite: 2.0 Minimum in MATH 102/Equivalent</td>
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<tr>
<td></td>
<td>Semester Prerequisite: 2.0 Minimum in MATH 112/Equivalent</td>
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<tr>
<td></td>
<td>A one-semester introduction to physics with an emphasis on applications to biological systems. Topics include force and motion, energy, collisions, biomechanics, fluid pressure and flow, bioelectricity and magnetism, sound, light, radioactivity, and nuclear medicine. Laboratory activities illustrate and amplify lecture topics.</td>
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<tr>
<td>PHYS 201</td>
<td>Introductory Physics I</td>
<td>4</td>
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<tr>
<td></td>
<td>Term Prerequisite: 2.0 Minimum in MTH 165/Equivalent</td>
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<tr>
<td></td>
<td>Semester Prerequisite: 2.0 Minimum in MTH 128/Equivalent</td>
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<td>First in a two-semester sequence of algebra-based physics courses designed to present the fundamental principles of physics, emphasizing applications to other fields. Topics include mechanics, solids and fluids, heat, sound, nuclear physics, and alternative energy sources and technologies. Laboratory activities and projects complement the lecture topics.</td>
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<tr>
<td>PHYS 202</td>
<td>Introductory Physics II</td>
<td>4</td>
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<td>Term Prerequisite: 2.0 Minimum in PHY 201/Equivalent</td>
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<td></td>
<td>Semester Prerequisite: 2.0 Minimum in PHY 201/Equivalent</td>
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<td></td>
<td>Continuation of PHYS 201. Topics include electricity and magnetism, vibrations and waves, sound, light and optics, quantum physics, elementary particles, relativity, and cosmology. Laboratory activities and projects complement the lecture topics.</td>
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<tr>
<td>PHYS 215</td>
<td>Physics III: Mechanics</td>
<td>4</td>
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<td></td>
<td>Term Prerequisite: 2.0 Minimum in MTH 213/Equivalent</td>
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<tr>
<td></td>
<td>Semester Prerequisite: 2.0 Minimum in MATH 151/Equivalent</td>
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<td>First in a three-semester sequence of calculus-based physics courses for science and engineering students. Topics include force and motion, momentum, work and energy, the conservation laws of energy and momentum, rotational motion, static equilibrium, gravitation, and oscillations. Integrated special topics will include relativity, nuclear physics, and thermodynamics.</td>
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<tr>
<td>PHYS 216</td>
<td>Physics III: Electromagnetism, Waves, and Optics</td>
<td>4</td>
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<tr>
<td></td>
<td>Term Prerequisite: 2.0 Minimum PHY 215/Equivalent, MTH 214</td>
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<tr>
<td></td>
<td>Semester Prerequisite: 2.0 Minimum PHYS 215/Equivalent, MATH 152</td>
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<td>Second in a three-semester sequence of calculus-based physics courses for science and engineering students. Topics include electric and magnetic forces and fields, electromagnetic energy, currents and circuits, electromagnetic oscillations and waves, mechanical waves and sound, light waves, and physical and geometrical optics.</td>
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<tr>
<td>PHYS 217</td>
<td>Physics III: Thermodynamics and Modern Physics</td>
<td>4</td>
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<td></td>
<td>Term Prerequisite: 2.0 Minimum PHY 215/Equivalent, MTH 214</td>
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<tr>
<td></td>
<td>Semester Prerequisite: 2.0 Minimum PHYS 215/Equivalent, MATH 152</td>
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<td>Third in a three-semester sequence of calculus-based physics courses for science and engineering students. Topics include thermodynamics, quantum physics, nuclear physics and radioactivity, condensed matter physics, special relativity, elementary particles, and cosmology.</td>
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<tr>
<td>PHYS 225</td>
<td>Physics I Laboratory</td>
<td>1</td>
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<td>Term Prerequisite: PHY 215 Concurrently/Equivalent</td>
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<td>Semester Prerequisite: PHY 215 Concurrently/Equivalent</td>
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<td>Laboratory course which complements Physics II. Experiments include investigations in mechanics, radioactivity, and heat. The lab is intended to increase students' knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects.</td>
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<td>PHYS 226</td>
<td>Physics II Laboratory</td>
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<td>Term Prerequisite: PHY 215 Concurrently/Equivalent</td>
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<td>Semester Prerequisite: PHY 215 Concurrently/Equivalent</td>
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<td>Laboratory course which complements Physics II. Experiments include investigations in electromagnetism, sound, and optics. The lab is intended to increase students' knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects.</td>
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<td>POLS 120</td>
<td>American Political System</td>
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<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>An analysis of the American political system. Emphasis is given to the federal system, with special attention to American government at the national level.</td>
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<td>POLS 121</td>
<td>State and Local Government</td>
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<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>A study of state and local governmental activities, their structures, functions, and methods of organizing resources and making policy. Consideration is given to the relationships between governmental units and the problems they confront, including relations between federal, state, and local government.</td>
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POLS 130  Honors: American Political System  4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An analysis of the American political system. Emphasis is given to the federal system, with special attention to American government at the national level. This course is the same as POLS 120 except that it is taught as a seminar for honors students only.

POLS 200  Political Behavior  3
Term Prerequisite: None
Semester Prerequisite: None
This introductory course examines the theories and concepts of political science and the methodology used by political scientists to analyze and understand American politics. Special emphasis is placed on political institutions and the relationships of those involved in the political process.

POLS 205  Government Internship  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making. The program covers all levels of government, from city and township through the federal level.

POLS 206  Advanced Government Internship  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
This course offers the student an advanced opportunity to participate in the actual workings of the political process.

POLS 230  Sex Roles and Political Change in a Post-Industrial Society  3
Term Prerequisite: None
Semester Prerequisite: None
An exploration of change in sex-roles and family structure in response to changing economic, social, and political forces. Topics to be covered include sex-role socialization, divorce and remarriage, and social changes in the economy, politics, and the military. The course blends a variety of perspectives within the social sciences.

POLS 250  American Political Parties and Interest Groups  3
Term Prerequisite: None
Semester Prerequisite: None
Emphasizes the origins, structure, and functions of political parties, examines the American political system in terms of citizens' concerns about community and government, and serves as a guide to political action by the citizenry. Included is the role and function of interest groups in American politics.

POLS 270  International Relations  3
Term Prerequisite: None
Semester Prerequisite: None
A course in contemporary international relations, with emphasis upon politics, concepts, theories, and rudimentary methods are surveyed. The relationship between international politics and U.S. foreign and domestic policy is explored.

POLS 290  Seminar: Supreme Court and Landmark Decisions  3
Term Prerequisite: None
Semester Prerequisite: None
An analysis of the United States Supreme Court. Particular emphasis will be devoted to Supreme Court decision-making. A number of landmark Supreme Court decisions will be reviewed from historical, political, public policy, institutional, and behavioral perspectives.

POLS 295  One Credit Independent Study in Political Science  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project chosen by the student, must be approved in advance by the Department Chair, must be supervised by a member of the faculty, and must meet specific academic goals.

POLS 296  Two Credit Independent Study in Political Science  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project chosen by the student, must be approved in advance by the Department Chair, must be supervised by a member of the faculty, and must meet specific academic goals.

POLS 297  Three Credit Independent Study in Political Science  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project chosen by the student, must be approved in advance by the Department Chair, must be supervised by a member of the faculty, and must meet specific academic goals.

POLS 399  Seminar: Elder College Psychology  .5
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to explore aspects in adult development particularly related to the elderly. Specific topics vary with each seminar.

PSYC 175  Psychology of Death: A Preparation for Living  3
Term Prerequisite: None
Semester Prerequisite: None
Examines psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include the dying process, suicide, death anxiety, children's concept of death, care of the dying, ethical decisions, social issues and considerations, near death experiences, and the grieving process.

PSYC 185  Seminar: Children and Death: Grief and Loss  2
Term Prerequisite: None
Semester Prerequisite: None
This course will provide a theoretical base and concrete tools to work with children in the grieving process. Students will explore their personal awareness of death as well as children's developmental issues as survivors and terminal patients.

PSYC 195  Seminar: Biofeedback  3
Term Prerequisite: None
Semester Prerequisite: None
The basic orientation to the field of psychology, designed as a general survey and as preparation for advanced courses in the field. Topics include methods, nervous systems, sensation, perception, development, learning, motivation, emotion, cognition, personality, abnormality, therapy, and social behavior.

PSYC 202  Psychology of Personality  3
Term Prerequisite: PSYC 200
Semester Prerequisite: PSYC 200
Discussion of concepts of adjustment, conflict, mental processes, and behavior modification. Survey of leading theories of personality, emphasizing their implications for assessing and modifying normal personality.

PSYC 203  Social Psychology  3
Term Prerequisite: PSYC 200
Semester Prerequisite: PSYC 200
Designed to give the student an understanding of the influence of social interaction upon the development of personality. Emphasis is on the interaction between the individual, group, and society.

PSYC 204  Educational Psychology  3
Term Prerequisite: PSYC 200
Semester Prerequisite: PSYC 200
An investigation of the contribution of psychology to education. Emphasis upon aspects of child growth and development, learning, measurement, and group dynamics which affect the achievement of pupils in the classroom.

PSYC 205  Human Growth and Development  3
Term Prerequisite: PSYC 200
Semester Prerequisite: PSYC 200
A study of the human life cycle from conception to death. Designed to investigate, describe, and explain changes in the physical, social, emotional, and cognitive areas that are a result of the continuous interaction of maturation and experience.

PSYC 209  Cognitive Psychology  3
Term Prerequisite: PSYC 200
Semester Prerequisite: PSYC 200
Cognitive psychology is the scientific analysis of human mental processes and memory structures in order to understand human behavior. Topics include attention, arousal, visual processing, recognition, memory processing, memory recall, problem-solving, language, and disorders of cognition.

PSYC 210  Biological Psychology  3
Term Prerequisite: PSYC 200, Science Course/PSY 201
Semester Prerequisite: PSYC 200
Biological psychology is an integration of physiology, psychology, and several other related disciplines. The course provides an in-depth exploration of the brain and the relation between it and behavior. Specific topics include: sensory processing, learning and memory, sleep and dreaming, and disorders of the brain and behavior.
PSYC 221 Child Psychology 3
Term Prerequisite: PSY 200
Semester Prerequisite: PSYC 200
Explores theories and principles of child development from conception to puberty. The course covers psychological, sociological, and biological aspects of maturation and development.

PSYC 222 Adolescents Psychology 3
Term Prerequisite: PSY 200
Semester Prerequisite: PSYC 200
Examines theoretical and empirical literature related to adolescence, emphasizing biological, psychological, and sociological aspects of maturation and development from puberty to young adulthood.

PSYC 240 Psychology of Human Sexuality 3
Term Prerequisite: PSY 200
Semester Prerequisite: PSYC 200
An exploration of human sexuality, including the history of human sexuality; sexual research; the origins, development, and nature of sexual response systems; sexual roles and orientations; love and intimacy; reactions to sexual diseases and disorders; and future trends in sexuality.

PSYC 250 Abnormal Psychology 3
Term Prerequisite: PSY 200
Semester Prerequisite: PSYC 200
An exploration of the nature, development, diagnosis, and treatment of psychopathology viewed from a general-systems (psychological, social, and physiological) perspective. Significant research, major theories, diagnostic techniques, and therapeutic techniques are discussed with respect to various psychological disorders.

PSYC 295 One Credit Independent Study in Psychology 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the Department Chair, must be supervised by a member of the faculty, and must meet specific academic goals.

PSYC 296 Two Credit Independent Study in Psychology 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the Department Chair, must be supervised by a member of the faculty, and must meet specific academic goals.

PSYC 297 Three Credit Independent Study in Psychology 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the Department Chair, must be supervised by a member of the faculty, and must meet specified academic goals.

PVAA 287 Applied Appraisal Concepts II 1
Term Prerequisite: BUS 283/Departmental Approval
Semester Prerequisite: PVAA 282/Departmental Approval
Field inspection and appraisal of residential, commercial, and industrial properties. Emphasis is on potential appraisal problems utilizing the cost approach to value.

PVAA 288 Income Approach to Value I 2
Term Prerequisite: BUS 283/RE 291
Semester Prerequisite: PVAA 282/REAL 279
This course introduces the advanced student to the appraisal concepts used in the appraisal of income-producing properties.

PVAA 289 Income Approach to Value II 2
Term Prerequisite: BUS 288
Semester Prerequisite: PVAA 288
Advanced study of the appraisal concepts utilized in the appraisal of income-producing properties.

QUAL 100 Introduction to Quality Assurance 3
Term Prerequisite: None
Semester Prerequisite: None
This course explores the historical evolution of total quality management and introduces the concepts of continuous improvement and process systems. Current quality control theories from both service and manufacturing environments are examined.

QUAL 103 Probability and Statistics for Quality Assurance 3
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to basic probability and statistics as related to quality assurance. Material covered includes probability concepts, counting techniques, binomial distribution, hypergeometric distribution, normal distribution, and process capability concepts.

QUAL 106 Statistical Problem-Solving in Quality Assurance 3
Term Prerequisite: QC 103
Semester Prerequisite: QUAL 103/Equivalent
This course covers basic problem-solving techniques in quality assurance. Many graphical and numerical approaches will be presented utilizing both path one and path two techniques.

QUAL 109 Control Charts for Quality Assurance 4
Term Prerequisite: QC 103
Semester Prerequisite: QUAL 103
This course introduces the student to the theory, application, design, selection and implementation of both variable and attribute control charts. Material covered also includes using a control chart to numerically analyze a process, distinguishing between capability and control, and analyzing control chart patterns in terms of probabilities.

QUAL 112 Cost of Quality 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: QUAL 100
Introduces the student to definitions and philosophy of quality costs through the interaction of typical accounting methods and the alignment of quality cost practices. Topics include: basic financial concepts, trend analysis, problem areas, reducing costs and planning.

QUAL 115 Metrology I 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: QUAL 103
Introduces the student to the theory, use, and application of conventional and digital precision instrumentation. Designed to fulfill the needs of quality assurance and skilled trades students requiring a foundation in metrology.

QUAL 118 Metrology II 3
Term Prerequisite: QC 120, QC 121
Semester Prerequisite: QUAL 115
Introduces the student to advanced instrumentation and its applications. The student will learn to utilize the optical comparator, laser micrometer, surface tester, and the coordinate measurement machine to accomplish evaluation of lab projects.

QUAL 121 Introduction to Statistical Process Control 2
Term Prerequisite: None
Semester Prerequisite: None
This course provides an introduction to statistical process control (SPC) philosophy and techniques. SPC is a means of controlling and improving processes through the use of data. Students will be introduced to the history of SPC, the Deming philosophy, process variation, techniques including control charts, and process improvement.
QUAL 124 - Quality Assurance in Service Organizations 3
Term Prerequisite: None
Semester Prerequisite: None
This course introduces students to service quality principles that apply to profit and non-profit, for wage and volunteer organizations. Topics include: quality concepts, terms and techniques as a basis for a sound quality program, quality failures connected to quality of service, nature and prevention of human error, and customer-focused quality improvement programs.

QUAL 200 - Team Problem-Solving 3
Term Prerequisite: None
Semester Prerequisite: None
This course covers problem-solving models and techniques for quality and productivity improvement with an emphasis on the interpersonal and communication skills. Students will use basic problem-solving methods and techniques, learn team leader and member roles, use effective communication skills, and prepare and present the project to the class.

QUAL 203 - Quality Systems Management 3
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on developing, managing, and implementing quality assurance systems. Course material and assignments are designed to develop student skills in the fundamental quality management areas.

QUAL 206 - Statistical Sampling 2
Term Prerequisite: GC 103
Semester Prerequisite: QUAL 103
This course introduces the student to operational characteristics curves for design and selection of sampling plans using the hypergeometric, binomial, and Poisson distributions for attributes. MIL-STD-105 and Dodge and Hogg rectification sampling plans will be introduced.

QUAL 209 - Reliability 3
Term Prerequisite: GC 103, ATM 151/Equivalent
Semester Prerequisite: QUAL 103
This course introduces the student to operational characteristics curves for design and selection of sampling plans using the hypergeometric, binomial, and Poisson distributions for attributes. MIL-STD-105 and Dodge and Hogg rectification sampling plans will be introduced.

QUAL 212 - Applied Statistics for Quality Assurance 4
Term Prerequisite: ATM 151/Equivalent
Semester Prerequisite: QUAL 103
This course covers the topics of hypothesis testing, confidence intervals and sample size determination as applied to various distributions, such as the normal, student T, chi-squared and F. Correlation and regression will also be covered.

QUAL 215 - Experimental Design in Quality Assurance 4
Term Prerequisite: GC 209
Semester Prerequisite: QUAL 109, QUAL 212
This course covers the concepts of analysis of variance and experimental design. Topics include one and two way ANOVA, various graphical and numerical tests for effects, determination and testing of residuals, and the use of mathematical models.

QUAL 218 - Quality Auditing 3
Term Prerequisite: None
Semester Prerequisite: None
This course prepares the student to plan, develop, review material, and implement quality audits in manufacturing and service organizations. This course may be used as a refresher in preparation for the Certified Quality Auditor (CQA) certification examination through the American Society for Quality control.

QUAL 221 - Weibull Analysis 2
Term Prerequisite: GC 103
Semester Prerequisite: QUAL 200
Introduces the student to the Weibull distribution, its parameters, and methods used to calculate and plot data to determine these parameters. The student will learn to use parameter calculations to determine reliability characteristics and analyze Weibull plots.

QUAL 224 - Manufacturing Supervision 3
Term Prerequisite: None
Semester Prerequisite: None
This course will help students to develop skills for supervising personnel in a production environment consistent with current quality engineering principles. Topics include customer focus, employee selection and development, task analysis equipment and resource utilization, and continuous improvement of quality and productivity utilizing data and employee involvement.

QUAL 236 - Quality Planning 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: QUAL 103/Equivalent
Identifies custom demands and plans for products and services to satisfy the customer. Topics include: understanding your customer, planning the development of products and services, and quality of delivery. Introduces QFD (Quality Function Deployment) Techniques include: seven new quality (management) tools, product and service-specific quality planning, and FMEA techniques.

QUAL 239 - Quality Improvement Projects 3
Term Prerequisite: GC 210
Semester Prerequisite: QUAL 215
This course requires the student to utilize previous knowledge gained in the Quality Assurance curriculum to set up projects, gather data, analyze data, and reach appropriate conclusions and recommendations. Possible project areas may include control charts, hypothesis testing, regression analysis, and experimental design.

RDGR 101 - Personal Reading I 1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.)

RDGR 102 - Personal Reading II 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.)

RDGR 103 - Personal Reading III 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.)

READ 005 - Reading Laboratory 0
Term Prerequisite: None
Semester Prerequisite: None
READ 005 arranges the days and times when students will attend Reading Clinic courses. Students must register for both a Reading Clinic course, such as READ 100, and a section of READ 005.

READ 100 - Reading Clinic IA 4
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 101 - Reading Clinic IB 4
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 102 - Reading Clinic IB 3
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 103 - Reading Clinic IIB 3
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)
READ 104  Reading Skills I A
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students whose reading skills range from pre-literate to basic literacy. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 105  Reading Skills II A
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 106  Reading Skills IIB
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 107  Reading Skills IIB
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 108  Individualized Reading A
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed for average readers, especially adults in the working community who wish to improve their reading proficiency with one-to-one instruction and directed practice. Students concentrate on areas that need strengthening. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 109  Individualized Reading B
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed for average readers, especially adults in the working community who wish to improve their reading proficiency with one-to-one instruction and directed practice. Students concentrate on areas that need strengthening. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.)

READ 115  Reading Comprehension
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Designed to increase basic comprehension skills, build vocabulary, and prepare students for college-level reading through the exploration of effective study techniques.

READ 119  Concentrated Speed Reading
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Designed for the average or better-than-average reader. Students improve rate by developing good reading habits, increasing reading flexibility, and practicing efficient reading techniques. Focuses on the aspects of perception and selectivity in rapid information processing.

READ 164  Speed Reading
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Designed for the student of average or better-than-average reading ability. Increases reading rate and comprehension for greater efficiency in studying and in general reading. Special attention is given to vocabulary improvement, the multiple purposes of reading, the importance of flexibility in reading, and increased concentration.

READ 174  Critical Reading
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
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/she reads.
REAL 283 Property Tax Appeal .5
Term Prerequisite: None
Semester Prerequisite: None
This course is designed to acquaint the homeowner/taxpayer with the principles behind the computation of Michigan's ad valorem real property tax assessment. Special attention will be paid to real property appraisal and the tax appeal process.

REAL 285 Real Estate Update Seminar .25
Term Prerequisite: None
Semester Prerequisite: None
A series of topical workshops designed to meet the needs of real estate professionals for continuing education in their industry.

RELG 211 World Religions I 4
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
This course surveys the origins and development of Eastern world religions from their early cultural context in Asia to their present forms. The religious beliefs and practices of Hinduism, Jainism, Buddhism, Sikhism, Confucianism, and Taoism are examined in terms of their vital role in the development of modern civilizations.

RELG 212 World Religions II 4
Term Prerequisite: WRI 121, HUM 212/HUM 150/HUM 151/FHL 201/FHL 202 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
This course surveys the origins and development of Western world religions from their early cultural context, including Persian and Hellenistic-Roman influences, to their present forms. The religious beliefs and practices of Judaism, Christianity, and Islam are examined in terms of their vital role in the development of modern civilizations.

RELG 241 Old Testament Literature 4
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
This course surveys the content of Judaism's Bible (Christianity's Old Testament) in its original Hebrew cultural and religious context, using some of the insights of modern critical scholarship. The origins and early development of the Hebrews and their religious beliefs and practices are examined.

RELG 242 New Testament Literature 4
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
This course surveys the content of Christianity's New Testament in its original Hebrew and Hellenistic-Roman context, using some of the insights of modern critical scholarship. The origins and early development of Christianity and its religious beliefs and practices are examined.

RELG 250 Religions of East Asia 4
Term Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
Semester Prerequisite: WRI 121 (ENG/WRI 122 Recommended)
This course surveys the origins and development of East Asian religions. The religious beliefs and practices of Confucianism, Taoism, Buddhism (Mahayana and Tibetan), and Shinto are examined in terms of their vital role in the development of ancient and modern East Asian civilizations.

RESP 128 Cardiopulmonary Pharmacology and Metrology 2
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
A study of general concepts of pharmacology and metrology for use in cardiopulmonary care. Emphasis is placed on pulmonary drugs and cardiovascular drugs. Medically related math skills are developed through example and exercise.

RESP 131 Respiratory Therapy Technology I 4
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Introductory course in professional respiratory care that includes didactic instruction, campus lab and clinical lab experience. The emphasis is placed on infection control, medical gases, aerosol and humidity therapy, physical assessment, and patient care principles. Topics of universal precautions and hygiene for the health-care provider are stressed.

RESP 132 Respiratory Therapy Technology II 5
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 151
Exploration of theory and techniques in individual respiratory care technique. The areas include medical gas, analyzers and blenders, aerosol therapy, airway management, chest physiotherapy, maximum demand inspiration (M.D.I.), intermittent positive pressure breathing (I.P.P.B.), and continuous mechanical ventilation.

RESP 133 Respiratory Therapy Technology III 4
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 132
A continuation of the techniques in RESP 132. Emphasis is placed in the following areas: advanced critical care techniques, pulmonary diagnostics, resuscitation and advanced cardiac life support, rehabilitation and home care, hemodynamic monitoring, chest radiology, hematology, and pediatrics.

RESP 142 Resp Therapy Clinical Practice I 8
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 131
Companion clinical practice course emphasizing the techniques covered in lecture and campus lab in RESP 132.

RESP 143 Resp Therapy Clinical Practice II 5
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 132, RESP 142
Companion clinical practice course emphasizing the techniques covered in lecture and campus lab in RESP 133.

RESP 234 Respiratory Therapy Technology IV 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 133
Presents advanced concepts and techniques necessary in specialized areas of respiratory therapy practice with an emphasis on emerging concepts in techniques and care appliances for this decade.

RESP 235 Respiratory Therapy Technology V 3
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 234
A continuation of RESP 234 which presents concepts and techniques necessary in specialized areas of respiratory practice with an emphasis on emerging concepts in techniques and care appliances for this decade.

RESP 244 Advanced Respiratory Clinical Practice III 8
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 143
Designed to provide practice of respiratory care in actual clinical settings for specialized contemporary care. These areas include required areas of adult and pediatric critical care, chronic respiratory care, pulmonary function studies, and neonatal intensive care. Optional areas of study include sleep studies, pulmonary home care, pulmonary rehabilitation, and cardiology.

RESP 245 Advanced Respiratory Clinical Practice IV 8
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 244
As the continuation of RESP 244, it too is designed to provide supervised practice of respiratory care in actual clinical settings for each of the highly specialized contemporary care areas.

RESP 251 Practice of Pulmonary Medicine 2
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 133/Departmental Approval
Practicing respiratory therapist, pulmonologist and other physicians share theory, techniques, and ethics involved in their practice of pulmonary medicine. Designed to not only shape the roles and practices of new therapists, but to promote understanding among different professionals involved in the practice of pulmonary medicine.

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RESP 252 Respiratory Professional Testing and Management
Term Prerequisite: Departmental Approval
Semester Prerequisite: RESP 251/Departmental Approval
Examines in detail two vital areas of professional development of the respiratory therapist. The system of professional advancement for therapist is explored and practical application. The examination for the certification and licensing levels are analyzed closely. Units of instruction in material and personal management for a clinical environment are presented.

RESP 271 Directed Study in Respiratory Therapy I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed individually to meet specific educational objectives and goals of the student in advanced specialty training in respiratory therapy on a learning contract basis. Projects and objectives are consistent with the contact time as required.

RESP 272 Directed Study in Respiratory Therapy II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed individually to meet specific educational objectives and goals of the student in advanced specialty training in respiratory therapy on a learning contract basis. Projects and objectives are consistent with the contact time as required.

RESP 273 Directed Study in Respiratory Therapy III
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed individually to meet specific educational objectives and goals of the student in advanced specialty training in respiratory therapy on a learning contract basis. Projects and objectives are consistent with the contact time as required.

RESP 274 Directed Study in Respiratory Therapy IV
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Designed individually to meet specific educational objectives and goals of the student in advanced specialty training in respiratory therapy on a learning contract basis. Projects and objectives are consistent with the contact time as required.

RESP 280 Pulmonary Function Diagnostics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Provides an in-depth clinical instruction and practice in pulmonary function testing and other related areas of pulmonary diagnostics.

ROMS 100 Introduction to Information Systems and Technology
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to resource planning systems including MRP II and their relationships to marketing, bar code/electronic data interchange, design, quality, manufacturing systems, and technology. The student will learn concepts and techniques relevant to APICS certification.

ROMS 105 Introduction to Just-In-Time
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to principles, concepts, and techniques of time-based management strategies. Topics include synchronous manufacturing, process flow, total quality, employee involvement, facilities management, and cost reduction. Emphasis is on synchronous manufacturing techniques.

ROMS 200 Master Production Planning
Term Prerequisite: None
Semester Prerequisite: None
This course introduces the student to master planning concepts and practices in engineering-to-order, make-to-order, assemble-to-order, and make-to-stock manufacturing environments. Master Production Planning is a primary way to increase customer service and improve utilization of resources in a manufacturing enterprise.

ROMS 205 Material and Capacity Requirements Planning
Term Prerequisite: None
Semester Prerequisite: None
Material and Capacity Requirements Planning is a time-phased priority planning system which includes MRP II that supports the building plan as defined in the master production schedule. Capacity Management is a function of planning, measuring, monitoring, and adjusting levels of capacity sufficient for the execution of the manufacturing system.

ROMS 210 Production Activity Control
Term Prerequisite: None
Semester Prerequisite: None
This course covers the principles, approaches, and techniques used by managers to plan, schedule, control, and evaluate the effectiveness of shop production operations.

ROMS 215 Total Productive Maintenance
Term Prerequisite: None
Semester Prerequisite: None
Total Productive Maintenance (TPM) creatively combines preventive and corrective maintenance techniques with principles of design-to-life-cycle-cost to assure reliability in function and ease of maintenance. Students will learn about the principal features of TPM such as total effectiveness, total maintenance systems, and total participation of all employees.

ROMS 220 Materials Logistics
Term Prerequisite: None
Semester Prerequisite: None
This course covers the concepts and techniques for the planning and procurement of materials, inventory control in manufacturing, and the distribution of products to customers. Areas covered: inventory planning and control, procurement, distribution, and the relationship among these areas. Topics include inventory methods, supplier partnerships, sourcing, traffic management, warehousing, and finished goods management.

ROMS 225 IBM Query
Term Prerequisite: CAS 100
Semester Prerequisite: CIS 100
IBM Query is a powerful, easy-to-use software package which runs on an IBM AS/400 computer. It is widely used to create display screens, reports, and files by retrieving data from AS/400 files. The student will have extensive hands-on use of Query accessing a complex data base on an AS/400. This course is designed for students with no programming experience.

ROMS 230 Electronic Data Interchange
Term Prerequisite: CAS 100
Semester Prerequisite: CIS 100
Electronic Data Interchange (EDI) is the electronic transfer of business data from one company's computer system to another. Automotive suppliers are the principal users of EDI. Students will learn how EDI works, benefits and costs, standards, third party networks, and how to implement EDI. The course will include classroom demonstrations of EDI software use.

ROMS 235 Cost Management Systems for Advanced Technology
Term Prerequisite: Departmental Approval
Semester Prerequisite: ROMS 105/ROMS 100
This course covers the cost techniques for a production system transformed from labor intensive to time-based technology intensive processes. Topics include activity-based analysis, cost drivers, non-financial measurements, and cost-system analysis.

ROMS 240 Bar Code Systems
Term Prerequisite: None
Semester Prerequisite: None
Course introduces the student to the fundamentals of bar code technology including symbologies, standards, and hardware and software systems. Applications and interfaces covered include data collection systems and electronic data interchange. Students will focus on information processing that targets market strategies and improvement drivers.

ROMS 245 Managing Productivity
Term Prerequisite: None
Semester Prerequisite: None
Course emphasizes current concepts related to productivity and the need to stimulate improvements in organizations. The relationships among elements of change, teamwork, communication, and technology are stressed. Students will learn techniques such as process mapping, best practices, and assessments.

ROMS 250 Product Management
Term Prerequisite: None
Semester Prerequisite: None
This course introduces students to subjects relating to the design, sale and service of a product, such as product life cycle, identifying and satisfying customer needs, creating products and service, and improvement of products in the field. This course will cover marketing and sales, field service, product design and development, and the relationships among these.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term Prerequisite</th>
<th>Semester Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROMS 255</td>
<td>Integrated Operations Support</td>
<td>3</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>This course covers the functional responsibilities, direction, strategic issues, and performance measurements for information systems, human resources, total quality management, and finance. Emphasis is placed on the integrated management of resources and the interrelationships of all functional areas throughout an enterprise.</td>
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<tr>
<td>ROMS 269</td>
<td>Manufacturing Process Systems</td>
<td>2</td>
<td>None</td>
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<td></td>
<td>This course is a survey of how manufacturing processes work together to make the products designed by the other activities of an integrated manufacturing system. The course includes four major topics: industrial facilities management, process design and development, manufacturing, and their relationships. On-site studies of an area manufacturer will supplement the course.</td>
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<tr>
<td>ROMS 290</td>
<td>ROMS Independent Study</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<td></td>
<td>Semester Prerequisite: Instructor Approval</td>
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<td>None</td>
<td>None</td>
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<tr>
<td></td>
<td>Course content customized to needs and interests of student.</td>
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<tr>
<td>SAFE 110</td>
<td>Safe Practices and First Aid</td>
<td>3</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>Term Prerequisite: None</td>
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<td>None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>Covers first aid and treatment through lectures, demonstrations, and practice as outlined by the American Red Cross or equivalent. Safe working practices with hand tools and around machines; safety devices on machines and how to identify and use them.</td>
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<tr>
<td>SCIS 124</td>
<td>Seminar: Sex Differences in the Human Brain</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>Gender differences in the brain are explored through discussion of current research. Topics include anatomical sex differences in the brains of animals and humans, prenatal and postnatal influence of hormones on brain development, lateralization, and sex differences in sensory perception. Students are required to make an oral presentation.</td>
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<tr>
<td>SCIS 267</td>
<td>Independent Study in Science</td>
<td>1</td>
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<td>None</td>
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<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td>Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, zoology, or other natural sciences. The topic is chosen by the student, and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement.</td>
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<tr>
<td>SCIS 288</td>
<td>Independent Study in Science</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: Departmental Approval</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td></td>
<td>Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, zoology, or other natural sciences. The topic is chosen by the student, and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement.</td>
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<tr>
<td>SCIS 299</td>
<td>Independent Study in Science</td>
<td>3</td>
<td>None</td>
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<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td></td>
<td>Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, zoology, or other natural sciences. The topic is chosen by the student, and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement.</td>
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<tr>
<td>SDEV 103</td>
<td>Preventing Parent Burnout</td>
<td>1</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>This course is designed to facilitate an understanding of parent burnout and its impact on mental and physical functions. The class will address causes, stages and symptoms, family and relationship dynamics, and problem-solving. The course will provide multiple skills and mechanisms to cope with stress and prevent parent burnout.</td>
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<td>SDEV 118</td>
<td>Stretching Your Dollars</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>Assistance is given in very basic money management, budget procedures, record keeping, wise shopping practices, low-cost entertainment and recreation, effective debt payment methods, and financial goal-setting and planning. Consumer awareness and problems in the marketplace will also be addressed.</td>
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<tr>
<td>SDEV 121</td>
<td>Exploring Your Potential</td>
<td>2</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>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.</td>
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<tr>
<td>SDEV 124</td>
<td>Techniques Of Study</td>
<td>2</td>
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<td>None</td>
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<td></td>
<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>This course helps students to 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.</td>
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<td>SDEV 125</td>
<td>Career Planning</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>The course is designed to teach students a career planning process. Students will identify 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.</td>
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<tr>
<td>SDEV 126</td>
<td>Elimination of Self-Defeating Behavior</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>This course is designed to help people change behaviors. Learning how self-defeating behaviors are initiated, maintained, and how they can be eliminated is the goal of the course. Behavior change is aimed at teaching people how to live life more fully and happily by identifying and cultivating life-giving behaviors.</td>
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<tr>
<td>SDEV 127</td>
<td>Job Search Skills</td>
<td>2</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>This course aids students in the job search process. Course content covers filling out applications, writing resumes and cover letters, interviews, and other techniques used in seeking employment. Group discussions focus upon personal attitudes toward job hunting.</td>
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<td>SDEV 142</td>
<td>Assertiveness I</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>Assertive behavior is interpersonal behavior in which a person expresses her/his opinions, feelings, beliefs, wants, personal rights, and values in such a way that the rights of others are not violated. Techniques covered teach participants to identify and practice exercising interpersonal rights and assertive skills.</td>
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<td>SDEV 145</td>
<td>Organizing Time</td>
<td>2</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td>Semester Prerequisite: None</td>
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<td>This course is designed to assist individuals in making the most effective and efficient use of their time. It will be structured with discussions, audiovisuals, written exercises, and readings dealing with goal setting, getting organized, time and work analysis, procrastination, and other barriers to successful time and task management.</td>
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<td>SDEV 150</td>
<td>Divorce Adjustment</td>
<td>1</td>
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<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>This course is designed for those who are experiencing or who have recently completed a divorce. The student-centered atmosphere is supportive and geared toward coping with and finding constructive alternatives to the emotional crisis of divorce.</td>
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<tr>
<td>SDEV 156</td>
<td>I'm Ok/You're Ok</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>This course shows the basic concepts related to transactional analysis (T.A.) and how these concepts can enrich our lives. Within each of us is a child, an adult, and a parent reacting to the world around us. Increased personal awareness about ourselves can help us to be more effective.</td>
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<td>SDEV 157</td>
<td>Single Parenting</td>
<td>2</td>
<td>None</td>
<td>None</td>
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<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td>This course is designed for those who are raising children in a single-parent family structure. This course includes such topics as communication, discipline, time-structuring, and the unique concerns of adults faced with the responsibilities of singleparenthood.</td>
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</tbody>
</table>
SDEV 158  
Anger Awareness  
Term Prerequisite: None  
Semester Prerequisite: None  
Based on the objective redefinition of anger, this course offers the opportunity to better understand and express this most troublesome human emotion. Self-exploration exercises, journal writing, group sharing, role-playing, lectures, and reading are parts of the learning process leading to "adaptive anger" skills which enhance self-esteem and relationships.  

SDEV 169  
Women as Winners  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed to offer participants new tools for insight, self-awareness, and understanding so that they can learn to set their own goals, emancipate themselves from the boundaries they have set for themselves, and, therefore, learn to become more authentic and self-actualizing.  

SDEV 171  
Rational Living  
Term Prerequisite: None  
Semester Prerequisite: None  
Using the teachings of Rational Emotive Training, a variety of approaches will be used to provide students with insight into the sources of problems. Techniques are offered to avoid frustration when working with others.  

SDEV 176  
Widow(e)hood I  
Term Prerequisite: None  
Semester Prerequisite: None  
This course explores means of meeting change and crisis in a positive way. It includes examination of possible new directions in life and the exploration of ways to make crisis work for the widowed.  

SDEV 188  
Rape Education  
Term Prerequisite: None  
Semester Prerequisite: None  
This course provides information in the following areas: the social and economic causes of sexual assault, motivations of rapists and the victim selection process, medical treatment needs, the legal definition, the psychological recovery process, resistance strategies, and an introduction to the concept of the basics of self-defense.  

SDEV 190  
Success Group  
Term Prerequisite: None  
Semester Prerequisite: None  
Designed to stress improvement of academic performance, the course provides mutual support and deals directly with the problems of underachievement. Students will learn to set and achieve short-term goals, identify motives, attitudes and study behaviors that lead to success, and those that are related to failure.  

SDEV 195  
Building Healthy Relationships  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed for those who wish to take a serious look at "what helps" and "what hurts" in building human relationships. Insights can be applied to any type of relationship and will help participants focus on changes they can need to make in building a healthier relational life style.  

SDEV 202  
Teach Yourself a New Way to Think  
Term Prerequisite: None  
Semester Prerequisite: None  
Sessions are designed to break traditional mind patterns to assist the change process. Students study a variety of thinking strategies and learn new creative thinking techniques. These include imagination, motivation, humor, forced relationships, visualization, and fantasy. This course is general in approach and not specific to any one academic discipline.  

SDEV 204  
Self Defense and Women I  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is a combination of consciousness-raising and skill-building experiences intended to increase students understanding, resources, and skills in sexual assault prevention and self-defense. Self-defense techniques taught in this seminar will focus on responses to unarmed attacks.  

SDEV 205  
Self-Defense and Women II  
Term Prerequisite: SD 204  
Semester Prerequisite: SDEV 204  
This seminar is both a review and expansion of the techniques and skills taught in "Women and Self-Defense I" (SDEV 204). Self-defense techniques taught in this class will focus on "ground defense," responses to armed attacks, multiple attackers, and special assailant situations.  

SDEV 220  
Parenting Skills  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed for anyone interested in the development of parenting skills. Skills will include active listening, problem-solving, and resolution of family conflict. Application of skills involves infants, pre-schoolers, school-age, and older children.  

SDEV 225  
Career Planning and Women  
Term Prerequisite: None  
Semester Prerequisite: None  
This course guides students through the process of career decision-making focusing on self-exploration and career exploration. Discussions and exercises, in a small group setting, help students identify their interests, skills, and values, including women's issues. Concurrently, students explore careers through library research, computerized resources, and other interviews.  

SDEV 237  
Black Women's Awareness  
Term Prerequisite: None  
Semester Prerequisite: None  
This class is an exploration of concerns and issues confronting the Black woman in America today. Students will have the opportunity to share their viewpoints and life experiences in response to such questions as: Who is the African-American woman? What are her needs? How can these needs be met?  

SDEV 240  
Empathy Training - Listening Skills/Facilitating Decisions  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will teach the student how to use empathy as a technique to deal with emotions, values, and decision-making in the communication process. The skills will be taught in a small group emphasizing a supportive, experiential atmosphere.  

SDEV 242  
Dealing With Stress  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed to facilitate an understanding of stress and how stress affects health and behavior. The goal is to aid participants in identifying lifetime skills which promote good mental and physical health. Topics include symptoms, personality, dietary influences, communication, balancing roles, goal setting and wellness.  

SDEV 244  
Widow(e)hood II  
Term Prerequisite: SD 176  
Semester Prerequisite: SDEV 176  
This course is an extension of Widow(e)hood I with a focus on growth. Concerns, such as "single-again" issues, single-parenting, balancing new responsibilities, and the emotional adjustment involved, are covered. A supportive environment which enhances the individual potential of each class member is maintained.  

SDEV 248  
Women's Reentry Seminar  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed for those in transition from a homemaking role to that of student or worker. Adjusting to change, setting personal and career goals, building support and confidence, preparing for academic success, and communication skills are emphasized.  

SDEV 271  
Living Alone Creatively  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed for both single men and single women and will focus on creative and positive aspects of living alone (or with others). Information will be shared to increase self-awareness, develop skills, and create a support system further the goal of living alone creatively.  

SDEV 289  
Burnout Prevention Workshop  
Term Prerequisite: None  
Semester Prerequisite: None  
This course will explore and identify the emotions, behaviors, and physical symptoms that are present in those experiencing burnout. Attention will be given to the causes of burnout associated with interpersonal relations in the workplace and in non-work life. Methods of control of burnout will be reviewed.  

SIGN 100  
Orientation to Deafness  
Term Prerequisite: None  
Semester Prerequisite: None  
This course is designed to introduce the student to pathological and cultural perspectives on deafness, and the implications those perspectives have, for persons who are deaf. Topics will be explored through discussions, readings, audiotape presentations and guest lectures.
SIGN 161 American Sign Language I
Term Prerequisite: SIGN 160
Semester Prerequisite: SIGN 160/Concurrently
Designed for students who wish to develop basic knowledge of American Sign Language vocabulary and grammar. There is also emphasis in the use of pantomime to explore non-verbal communication and its function within ASL.

SIGN 162 American Sign Language II
Term Prerequisite: SIGN 161/Departmental Approval
Semester Prerequisite: SIGN 161/Departmental Approval
Designed to increase students' knowledge and use of American Sign Language vocabulary and grammar, as well as to focus on specific grammatical elements for more in-depth analysis and practice.

SIGN 163 American Sign Language III
Term Prerequisite: SIGN 162, SIGN 164
Semester Prerequisite: SIGN 162, SIGN 166
Designed to provide additional vocabulary and synthesis of grammatical elements of American Sign Language through expressive and receptive use of conversational sign language.

SIGN 164 American Sign Language IV
Term Prerequisite: SIGN 163/Departmental Approval
Semester Prerequisite: SIGN 163/Departmental Approval
This course is intended to build conceptual understanding and use of American Sign Language. Students will develop American Sign Language skills by interpreting in ASL paragraphs which are presented in English context.

SIGN 166 Fingerspelling
Term Prerequisite: SIGN 162
Semester Prerequisite: SIGN 162/Concurrently
Provides the student with concentrated instruction and practice in both expressive and receptive fingerspelling skills.

SIGN 167 Receptive Manual Communication
Term Prerequisite: SIGN 163
Semester Prerequisite: SIGN 163/Concurrently
Designed to increase the student's receptive skills in conversational sign language focusing on comprehension of the various manual communication systems utilized by deaf persons. Sign-to-voice techniques and practice will be utilized through the use of prepared videotapes.

SIGN 168 Expressive Manual Communication
Term Prerequisite: SIGN 163
Semester Prerequisite: SIGN 162
This course focuses on synthesizing grammatical elements of American Sign Language and using them in an expressive mode. It creates awareness of conversational behaviors used by the deaf community and provides practice of those behaviors in classroom and other settings.

SIGN 170 Creative Arts Signin
Term Prerequisite: SIGN 163/Departmental Approval
Semester Prerequisite: SIGN 162
This class explores uses, considerations, and techniques for signing elements of the creative arts including poetry, storytelling, and song.

SIGN 250 Deaf Culture and History
Term Prerequisite: SIGN 163
Semester Prerequisite: SIGN 163/Concurrently
This course looks closely at the unique experiences of those in the Deaf community. Examines the history of the deaf community in America and the sociology of the hearing-impaired (both deaf and the hard-of-hearing).

SIGN 251 Psychosocial Aspects of Hearing Loss
Term Prerequisite: SIGN 163/Departmental Approval
Semester Prerequisite: SIGN 163/Departmental Approval
Provides the student with a more advanced understanding of the effects of hearing impairment on the development of individuals and families. Several different models of human development are explored as they relate to hearing-impaired children and adults, as well as their families and social systems.

SIGN 260 Linguistic Principles of American Sign Language
Term Prerequisite: SIGN 163/Departmental Approval
Semester Prerequisite: SIGN 163/Departmental Approval
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.

SIGN 261 Principles of Interpreting I
Term Prerequisite: ITP Screening
Semester Prerequisite: ITP Screening
Surveys basic interpreting through lecture, role playing, and classroom discussion. Introduces the ethics of interpreting, roles, and responsibilities of the interpreter. Examines the role and necessary skills of the interpreter in various settings: educational, mental health, vocational rehabilitation, legal, religious, phone, television, medical, deaf, blind, and minimal language skills.

SIGN 262 Principles of Interpreting II
Term Prerequisite: SIGN 261
Semester Prerequisite: SIGN 261
This course is designed to provide 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.

SIGN 263 Sign to Voice Interpreting I
Term Prerequisite: SIGN 165
Semester Prerequisite: SIGN 167
This course is designed to develop and refine necessary basic skills and fluency in receptive sign language and for voicing all levels of communication of deaf individuals. Techniques taught include interpreter task analysis, listening, attending, internal message formulation, vocabulary search, and monitoring output.

SIGN 264 Sign to Voice Interpreting II
Term Prerequisite: SIGN 263
Semester Prerequisite: SIGN 263
This course is an advanced class in skill development and fluency in voicing 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, de-aliasing, and pacing.

SIGN 265 Advanced Interpreting and Transliterating Techniques
Term Prerequisite: SIGN 262
Semester Prerequisite: SIGN 262
This course is designed to continue the development of skills necessary for interpreter evaluation/qualification. Students will be provided with simulated testing situations using interactive videotapes of hearing/deaf individuals requiring students to interpret/transliterate.

SIGN 267 Practicum I
Term Prerequisite: SIGN 261/Departmental Approval
Semester Prerequisite: SIGN 261/Departmental Approval
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 22 clock hours in their placement setting.

SIGN 268 Practicum II
Term Prerequisite: SIGN 267/Departmental Approval
Semester Prerequisite: SIGN 267/Departmental Approval
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 22 clock hours in their placement setting.

SIGN 269 Practicum III
Term Prerequisite: SIGN 267/Departmental Approval
Semester Prerequisite: SIGN 267/Departmental Approval
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 64 clock hours in their placement setting.

SIGN 295 Independent Study in Sign Language I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Individual projects in sign language or interpreting. Students will spend at least two hours a week for each credit in independent study.

SIGN 296 Independent Study in Sign Language II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individual projects in sign language or interpreting. Students will spend at least two hours a week for each credit in independent study.

SOCL 120 Introduction to Sociology
Term Prerequisite: None
Semester Prerequisite: None
A survey of major theoretical perspectives, concepts, and methods of sociology. Emphasis is given to societal origins, evolution, and organization; culture; socialization; stratification; social institutions; and social change.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCL 185</td>
<td>Seminar: The Africans</td>
<td>2</td>
<td>Term Prerequisite: None Semester Prerequisite: None A survey of the cultural, social, political, and economic importance of Africa in the modern world. The seminar will include the television series, &quot;The Africans.&quot;</td>
</tr>
<tr>
<td>SOCL 196</td>
<td>Japan Adventure Orientation</td>
<td>1</td>
<td>Term Prerequisite: None Semester Prerequisite: None This course is designed specifically for the Japan Adventure participants in order to offer them information on the background, nature, activities, and related rules and regulations of the Japan Adventure program.</td>
</tr>
<tr>
<td>SOCL 254</td>
<td>Marriage and Family</td>
<td>3</td>
<td>Term Prerequisite: SS 101/SA 200/PSY 200 Semester Prerequisite: SOCL 120 A study of the changes in society over the past century in terms of their dramatic impact on sexual relationships, marriage, and family life. Topics will include sex and gender roles, sexual behavior, values, psychological needs, divorce, and parenting.</td>
</tr>
<tr>
<td>SOCL 255</td>
<td>Contemporary Social Problems</td>
<td>3</td>
<td>Term Prerequisite: SS 101/SA 200 Semester Prerequisite: SOCL 120 Consideration of current social problems, such as family stability, racism, poverty, crime, and urbanization, from a framework of sociological theory and recent empirical studies.</td>
</tr>
<tr>
<td>SOCL 260</td>
<td>Minority Groups</td>
<td>3</td>
<td>Term Prerequisite: SS 101/SA 200 Semester Prerequisite: SOCL 120 An introduction to the culture and contemporary life styles of American minorities. Emphasis is placed on basic sociological and anthropological concepts with respect to selected minority groups, particularly the African American, Mexican American, Native American, and Asian American.</td>
</tr>
<tr>
<td>SOCL 288</td>
<td>Seminar: America in the Civil Rights Years</td>
<td>3</td>
<td>Term Prerequisite: None Semester Prerequisite: None This course explores the social, political, and economic aspects of the civil rights movement in the United States from 1954 to 1965. Key concepts, events, and participants in the movement will be studied in order to illuminate how it has affected the course of American politics and society.</td>
</tr>
<tr>
<td>SOCL 295</td>
<td>One Credit Independent Study in Sociology</td>
<td>1</td>
<td>Term Prerequisite: Departmental Approval Semester Prerequisite: Departmental Approval Special research projects and/or individual readings in sociology/anthropology. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to students with a grade-point average of at least 3.0 in courses offered by this department.</td>
</tr>
<tr>
<td>SOCL 296</td>
<td>Two Credit Independent Study in Sociology</td>
<td>2</td>
<td>Term Prerequisite: Departmental Approval Semester Prerequisite: Departmental Approval Special research projects and/or individual readings in sociology/anthropology. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to students with a grade-point average of at least 3.0 in courses offered by this department.</td>
</tr>
<tr>
<td>SOCL 297</td>
<td>Three Credit Independent Study in Sociology</td>
<td>3</td>
<td>Term Prerequisite: Departmental Approval Semester Prerequisite: Departmental Approval Special research projects and/or individual readings in sociology/anthropology. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to students with a grade-point average of at least 3.0 in courses offered by this department.</td>
</tr>
<tr>
<td>SOWK 101</td>
<td>Introduction to Social Work</td>
<td>3</td>
<td>Term Prerequisite: None Semester Prerequisite: None This course introduces the principles of social work practice. Emphasis is on social work careers, description of methods, skills and standards of practice, definitions of the helping roles, survey of helping agencies and institutions, and overview of social issues and client needs relative to social work practice.</td>
</tr>
</tbody>
</table>

SOCL 185-SPAN 295

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<tr>
<td>SOWK 203</td>
<td>Social Work Interviewing: Concepts and Skill Practice</td>
<td>3</td>
<td>Term Prerequisite: SW 101/HUS 101 Semester Prerequisite: SOWK 101/HUSE 100 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.</td>
</tr>
<tr>
<td>SOWK 205</td>
<td>Social Welfare</td>
<td>3</td>
<td>Term Prerequisite: SW 101 Semester Prerequisite: SOWK 101/HUSE 100 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.</td>
</tr>
<tr>
<td>SOWK 209</td>
<td>Community Organization</td>
<td>3</td>
<td>Term Prerequisite: SW 101/HUS 101 Semester Prerequisite: SOWK 101/HUSE 100 This course introduces the principles, concepts, and methods of community organization techniques. Emphasis is on the introduction of basic practice skills and intervention techniques within a framework of beginning theoretical knowledge.</td>
</tr>
<tr>
<td>SPAN 101</td>
<td>Elementary Spanish I</td>
<td>4</td>
<td>Term Prerequisite: None Semester Prerequisite: None 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.</td>
</tr>
<tr>
<td>SPAN 102</td>
<td>Elementary Spanish II</td>
<td>4</td>
<td>Term Prerequisite: SPN 102/Equivalent/3.0 Minimum in SPN 101 Semester Prerequisite: SPAN 101/Equivalent 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.</td>
</tr>
<tr>
<td>SPAN 115</td>
<td>Seminar: Conversational Spanish I</td>
<td>3</td>
<td>Term Prerequisite: None Semester 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.</td>
</tr>
<tr>
<td>SPAN 116</td>
<td>Seminar: Conversational Spanish II</td>
<td>3</td>
<td>Term Prerequisite: SPN 185/Equivalent Semester Prerequisite: SPAN 115/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 cultures, and essential grammar for communication. Class taught largely in Spanish.</td>
</tr>
<tr>
<td>SPAN 201</td>
<td>Intermediate Spanish I</td>
<td>4</td>
<td>Term Prerequisite: SPN 103/Equivalent/3.0 Minimum in SPN 102 Semester Prerequisite: SPAN 102/Equivalent First course of a two-semester sequence in intermediate Spanish. Begins with intermediate review of grammar, intensive vocabulary building, listening comprehension, and writing compositions. Encourages conversation by introducing discussions about the cultures of the Spanish-speaking world. Class taught entirely in Spanish.</td>
</tr>
<tr>
<td>SPAN 202</td>
<td>Intermediate Spanish II</td>
<td>4</td>
<td>Term Prerequisite: SPN 202/Equivalent/3.0 Minimum in SPN 201 Semester Prerequisite: SPAN 201/Equivalent Second course of a two-semester sequence in Intermediate Spanish. Continues an intermediate review of grammar, intensifies vocabulary building, strengthens listening comprehension and composition-writing, and improves oral fluency through intense discussions on the cultures of the Spanish-speaking world. Class taught entirely in Spanish.</td>
</tr>
<tr>
<td>SOWK 295</td>
<td>Independent Study</td>
<td>3</td>
<td>Term Prerequisite: Departmental Approval Semester Prerequisite: Departmental Approval Special research projects and/or individual readings in Spanish. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to Honors students who have grade-point averages of at least 3.0 in courses offered by this department.</td>
</tr>
</tbody>
</table>
SPAN 296 Independent Study
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in Spanish. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to Honors students who have grade-point averages of at least 3.0 in courses offered by this department.

SPCH 120 Dynamics of Communication
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the theory and practice of speaking and listening effectively in interpersonal, group, and public speaking situations. The course utilizes readings, lectures, discussions, learning activities, and oral and written assignments to help students understand the communication process and become more skillful interpersonal, group, and public communicators.

SPCH 130 Fundamentals of Public Speaking
Term Prerequisite: None
Semester Prerequisite: None
Helps beginning speakers develop the skills and confidence needed to speak effectively to audiences in public situations. Through a carefully planned series of speaking assignments, students learn the proper techniques for researching, developing, organizing, outlining, and delivering effective informative and persuasive speeches.

SPCH 140 Interpersonal Communication
Term Prerequisite: None
Semester Prerequisite: None
Introduction to fundamental principles and skills of interpersonal communication. Students investigate techniques for interacting effectively in family, intercultural, and male/female relationships. Class discussions, learning activities, and assignments assist students in examining the impact of their communication on others and in developing effective interpersonal skills.

SPCH 250 Advanced Public Speaking
Term Prerequisite: SPH 104
Semester Prerequisite: SPCH 130/Departmental Approval
Intended for students seeking advanced instruction in the principles and techniques of public speaking. Students' knowledge of public communication is enhanced through the investigation of rhetorical theories and relevant research findings. Students' performance techniques are strengthened through a series of oral assignments focusing on informative, persuasive, and special-occasion speaking.

SPCH 260 Nonverbal Communication
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the ways people communicate without words. Students investigate nonverbal communication theory and research and learn the messages that gestures, facial expressions, vocal cues, physical appearance, clothing, touch, distance, and time convey in American and foreign cultures. Students' nonverbal communication skills are enhanced through assignments and in-class learning activities.

SPCH 270 Mass Communication
Term Prerequisite: None
Semester Prerequisite: None
Introduction to broadcast, film, and print media and their impact on the individual and society. Students investigate theory and research on topics including values the media convey, media stereotypes, violence, news, advertising, and the role of media in political campaigns. Assignments and observational projects help students become enlightened media consumers.

SPCH 280 Intercultural Communication
Term Prerequisite: None
Semester Prerequisite: None
Introduction to intercultural communication theory and skills. Students investigate the concepts of communication and culture and learn how such variables as perception, world view, religion, language, and nonverbal systems influence interactions between people of different cultural backgrounds. Class discussions, learning activities, and assignments help students develop their intercultural communication skills.

SPCH 295 Independent Study in Speech I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit in independent study.

SPCH 296 Independent Study in Speech II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit in independent study.

SPEL 005 Spelling Laboratory
Term Prerequisite: None
Semester Prerequisite: None
SPEL 005 arranges the days and times when students will attend spelling lab courses. Students must register for both a spelling lab course, such as SPEL 109, and a section of SPEL 005.

SPEL 109 Spelling Development I
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Focuses on basic spelling problems and principles progressing from elementary three-letter words through words frequently used but commonly misspelled. Prepares students for Spelling Development II.

SPEL 110 Spelling Development II
Term Prerequisite: SPEL 151/Placement Test
Semester Prerequisite: SPEL 109/Placement Test
Advances from intermediate to college level. Covers words frequently misspelled and misspelled in general college work and practical adult life situations. Includes meaning, pronunciation, and the most useful spelling principles plus their exceptions.

SPEL 165 Business Spelling
Term Prerequisite: Placement Test
Semester Prerequisite: SPEL 110/Placement Test
Covers sophisticated and specialized college-level words frequently misspelled and misspelled in business. Includes general spelling principles and their exceptions, unusual and unexpected spellings in the context of dictation, pronunciation, proofreading, and correct usage.

STAT 170 Introduction to Statistics
Term Prerequisite: 2.0 in MTH 164/Placement Test
Semester Prerequisite: 2.0 in MTH 121/Placement Test
This is a survey course in statistics for students in social science, psychology, education, and other non-business disciplines. Topics studied include descriptive statistics, probability, random variables, confidence intervals, hypothesis testing, and linear regression. In addition, students will solve applied problems by completing required computer assignments using SPSSX.

STAT 215 Introduction to Probability and Statistics for Business
Term Prerequisite: 2.0 in MTH 165, 166/Placement Test
Semester Prerequisite: 2.0 in MTH 122/MATH 126/MATH 130/Placement Test
This is a first course in probability and statistics with emphasis on business applications. Topics studied include descriptive statistics, data analysis, laws of probability, random variables, confidence intervals, and hypothesis testing. In addition, students will solve applied problems by completing required computer assignments using SPSSX.

SURG 100 Fundamental Surgical Technician
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Introduction to role and function of surgical technologist as a member of the surgical team. Lectures present all skills, procedures, and protocol necessary to participate in the operating room.

SURG 101 The Surgical Patient
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Lectures will present the protocol and procedures directly affecting the care and safety of the patient. This includes the ethical, legal, and moral responsibilities of the technologist, the concepts of patient care, and preoperative routines.

SURG 102 Surgical Pharmacology
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
Medications frequently used in the operating room, local and general anesthetics, drugs used for surgical patients, procedures for handling medications in sterile and non-sterile areas, and mixing and measuring medications.

SURG 103 Surgical Assepsis
Term Prerequisite: Allied Health Professional
Semester Prerequisite: Allied Health Professional
Basic course on hospital infections including definitions, pathogenic organisms, bacteria, fungi, viruses, protozoa, and transmission of infectious agents. Covers sterilization and disinfection of equipment and supplies in the operating room.

SURG 104 Operative Procedures
Term Prerequisite: ST 105
Semester Prerequisite: SURG 100, 101
Lectures will present indications for surgery, patient preparation, special equipment and supplies, purpose and expected outcome, and possible complications.
SURG 121 Applied Operating Room Techniques I
Term Prerequisite: Admission to Program
Semester Prerequisite: Admission to Program
First clinical session at an assigned hospital. Application of theory in the use of surgical supplies and equipment before scrubbing in actual procedures.

SURG 122 Applied Operating Room Techniques II
Term Prerequisite: ST 101
Semester Prerequisite: SURG 121
Clinical session at hospital. Students’ first experience of application of theory and clinical skills in actual surgical procedures.

SURG 123 Applied Operating Room Techniques III
Term Prerequisite: ST 103
Semester Prerequisite: SURG 122
Clinical session at hospital. Continued application of theory and clinical skills in advanced surgical procedures.

SURG 124 Applied Operating Room Techniques IV
Term Prerequisite: ST 105
Semester Prerequisite: SURG 123
Clinical session at hospital. Application of theory and clinical skills in advanced surgical procedures and surgical specialty areas.

TDTP 110 Truck Train I
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
This is the initial course in a sequence of three. This course is intended to prepare the student to pass the State of Michigan CDL written exam. Some vehicle orientation is included.

TDTP 111 Truck Train II
Term Prerequisite: TDTP 110
Semester Prerequisite: TDTP 110
This is the second course in a sequence of three. Students will operate the vehicles on the driving range, developing the skills necessary to interact with highway traffic.

TDTP 112 Truck Train III
Term Prerequisite: TDTP 111
Semester Prerequisite: TDTP 111
This is the final course in the Truck Driver Training Program. The students will complete range driving and back ing, do local highway driving, and complete an extensive road trip. In the final week, the CDL third-party exam will be administered.

TECH 090 Basic Drafting
Term Prerequisite: None
Semester Prerequisite: None
This course focuses on basic concepts in orthographic projection, including sketching of both orthographic and pictorial views. Lettering techniques are stressed with a brief introduction to dimensioning techniques.

TECH 100 Applied Basic Mathematics
Term Prerequisite: None
Semester Prerequisite: None
This reviews basic arithmetic operations: whole numbers, common fractions, decimals, percentage, ratio, and proportion. Introduces some basic algebraic concepts and solutions for practical geometric problems involving areas and volumes. Helps the student understand conversion by using the metric system to solve some of the applied problems.

TECH 101 Applied Algebra and Trigonometry
Term Prerequisite: ATM 150
Semester Prerequisite: TECH 100
This course introduces and/or reviews basic algebraic operations with emphasis on those operations essential in solving practical problems encountered in shop and/or field operations. Simple trigonometric functions are introduced for analysis of industrial problems. Calculators are used.

TECH 102 Applied Geometry and Trigonometry
Term Prerequisite: ATM 151
Semester Prerequisite: TECH 101
Applications of geometric and basic trigonometric functions in the solution of practical shop and field problems. Provides opportunities to use critical thinking skills in the solution of problems taken directly from industry.

TECH 103 Compound Angles
Term Prerequisite: ATM 153
Semester Prerequisite: TECH 102
This course combines solid geometry and advanced (solid) trigonometry, equipping students to solve setup problems involving angles and tilted work. Emphasis on application of actual tooling setups for complex machining operations are used to make the course relate to real life situations.

TECH 110 Technical Math
Term Prerequisite: Departmental Approval
Semester Prerequisite: Placement Test
This course applies topics from algebra and trigonometry to architectural, civil, GIS, landscape, electronics, and construction technologies. Covers quadratic equations, trigonometry, vectors, number bases, basic logic, and Boolean algebra.

TECH 120 Technical Communications
Term Prerequisite: None
Semester Prerequisite: None
This course uses a practical approach to clear communication, including organizational skills, a review of grammar, and skills needed to write and speak effectively on the job. Written assignments include memos and business letters.

TECH 124 Technical Report Writing
Term Prerequisite: TEC 102
Semester Prerequisite: TECH 120
This course covers technical writing style, format, and techniques. Emphasis is on organization and purpose. Special unit on developing materials for employment applications. Recommended for second-year students.

TECH 125 Technical Presentations
Term Prerequisite: None
Semester Prerequisite: None
This course covers the technical knowledge, skills, and techniques for preparing and delivering informative and persuasive speeches to small, technically knowledgeable groups in industrial settings.

TECH 130 PC Applications for Technology
Term Prerequisite: None
Semester Prerequisite: None
This course provides students with a basic understanding and skill level in some PC applications used in technology. In addition to DOS, applications covered include a word processor, a spreadsheet, a database manager, and a computer-assisted drafting/design program. This is an introduction to four different applications commonly found on microcomputers used in technology.

TECH 132 PC/MS DOS Applications for Technology
Term Prerequisite: CIM 250
Semester Prerequisite: TECH 130
This course provides intermediate to advanced instruction in the PC-DOS/MS-DOS operating system. Topics include the directory structure, batch files, retrieving lost files, and all major DOs commands. This course is especially valuable for those responsible for installing and maintaining software on PCs, including CAD/CAM systems, and other technology-related applications.

TECH 134 Technical Publishing with Ventura
Term Prerequisite: Keyboard Familiarity
Semester Prerequisite: Keyboard Familiarity
This course is an introduction to Ventura Publisher for preparing technical manuals, brochures, ads, books, flyers, and other publications. Included are page layout strategies, fonts, and preparing images from other applications for use in Ventura. All of Ventura’s menus and options are discussed and used in the course.

TECH 136 Technical Publishing with Pagemaker
Term Prerequisite: Keyboard Familiarity
Semester Prerequisite: Keyboard Familiarity
This course is an introduction to PageMaker for the PC for preparing technical manuals, brochures, ads, books, flyers, and other publications. Included are page layout strategies, fonts, and preparing images from other applications for use in PageMaker. All of PageMaker’s menus and options are discussed and used in the course.

TECH 139 Survey of Desktop Publishing Systems
Term Prerequisite: None
Semester Prerequisite: None
This course provides the student with a comprehensive overview of the capabilities, costs and technology, both hardware and software, required for electronic desktop publishing. Students are given an understanding of the many uses for desktop publishing, hardware and software requirements and options, approximate costs, successful implementation factors, training options, and literature available.

TECH 161 Gunsmithing
Term Prerequisite: None
Semester Prerequisite: None
Topics include installation of sights, scopes and rebarrelling actions. Repairing and restocking rifles and shotguns as well as assembling muzzle-loading kits are topics that could be covered.
TECH 164  Boat Building  2
Term Prerequisite: None
Semester Prerequisite: None
The students learn to build a boat with materials and processes using wood and modern adhesives and coatings in a manner suitable for work in a small shop. Subjects covered include boat design, alternate construction methods, materials required, and laying out the hull.

TECH 166  Bicycle Repair and Maintenance  2
Term Prerequisite: None
Semester Prerequisite: None
This course covers basic reconditioning techniques for bicycles, including wheel truing, truing wheels, and general maintenance.

TECH 171  Graphics I  3
Term Prerequisite: None
Semester Prerequisite: None
This course explores basic printing processes and operations. It covers offset techniques, stripping, layout, and composition processes.

TECH 172  Graphics II  3
Term Prerequisite: ATG 175
Semester Prerequisite: TECH 171
This is a further study of individual interest areas: press operations, processes, process camera, halftones, and new techniques and tricks of the trade.

TECH 200  Applied Physics  4
Term Prerequisite: ATR 151
Semester Prerequisite: TECH 101
This course includes basic principles of construction, electronics, electrical, civil, hydraulics, metal working, heating and air conditioning technologies as they relate to the physical sciences. Provides basic training in fundamental physical phenomena and simple machines with emphasis put on their application to practical shop and field problems.

TECH 210  Technology and Change  3
Term Prerequisite: None
Semester Prerequisite: None
This course explores issues surrounding technology and technological change. Topics such as automotive, electronics, aerospace, and service industries, and the loss of opportunity to develop and manufacture technology will be used to examine changes in social, political, and economic order of local and world communities and individual life changes.

TECH 299  College Teaching Project  2
Term Prerequisite: Previous/Current Teaching Assignment at the Community College Level.
Semester Prerequisite: Previous/Current Teaching Assignment at the Community College Level.
It is the purpose of this course to introduce beginning instructors at the community college level to basic principles and processes that will allow for a productive teaching experience and successful student learning. By the end of this course each participant will have constructed a complete course and will be prepared to start a teaching assignment with confidence.

THEA 041  Scene Study Workshop for High School Students  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
The Scene Study Workshop is a course for motivated high school students. Students work on basic acting skills, develop physical and vocal expressiveness, analyze dramatic literature, and present a final classroom performance.

THEA 051  Stage Voice for High School Workshops  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students learn the basics of vocal production including posture, breathing, pitch, resonance, articulation, and relaxation. Students will develop their own vocal warm-up exercises.

THEA 061  Stage Movement for High School Workshops  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
A survey of the basic elements of movement for the stage. Students develop physical endurance, strength, and flexibility; work with masks to develop physicalization of characters; and study Laban movement.

THEA 071  Musical Theatre Workshop for High School Students  6
Term Prerequisite: Approval by Audition
Semester Prerequisite: Approval by Audition
A workshop which includes stage voice, musical theatre dance technique, and basic acting skills. Workshop culminates in a studio performance of a musical revue in which all students must act, sing, and dance.

THEA 081  Theatre Classics Workshop for High School Students  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
High School workshop in which students will analyze classical scripts, scan verse scripts, develop understanding of power of poetry, and work as a choral unit. Students will work with both Shakespeare and Greek scripts. Workshop culminates in a recital performance of scenes.

THEA 091  Play Production/Performance Workshop for High School Students  3
Term Prerequisite: Approval by Audition
Semester Prerequisite: Approval by Audition
Students will perform an entire production of a chosen script. Focus in the workshop will be on basic acting skills, script analysis, script scoring, rehearsal techniques and strategies, and production skills.

THEA 110  Introduction to Theatre  3
Term Prerequisite: None
Semester Prerequisite: None
Introduction to Theatre includes definition and analysis of theatre, art, and theatrical art; script analysis; the relationship between theatre and the culture from which it comes; and the roles of theatre practitioners.

THEA 111  Production Practicum I  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Introduction to the techniques of stage craft for the performing arts: the basic fundamentals involved in tool usage and safety, stage lighting, lighting plots, student interpretation, and understanding of the organization of backstage production.

THEA 112  Production Practicum II  2.5
Term Prerequisite: THEA 212/23
Semester Prerequisite: THEA 111
In-depth study of stage craft for the performing arts. Students must work as crew chief in some technical area on a studio or mainstage production.

THEA 116  Design Practicum I  3
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the elements of design and how they relate to performance. Introduction to color theory as it relates to costume, stage lighting, and design. Techniques of rendering, translation of a picture to three-dimensionality, spatial relationships, and development of a design concept also covered.

THEA 120  Introduction to Acting  2
Term Prerequisite: None
Semester Prerequisite: None
Exploring various acting techniques and introduces the beginning student to the skills necessary to maintain a sustained dramatic performance. Theatre games and improvisation exercises to overcome stage fright and to develop concentration and listening skills are heavily emphasized. Students present final short scene.

THEA 122  Introduction to Scene Study  1
Term Prerequisite: THTR 250
Semester Prerequisite: THEA 120
Students rehearse and perform short scenes from contemporary plays. Course includes scoring and script analysis by peers.

THEA 124  Introduction to TV/Film Acting  2
Term Prerequisite: THTR 250
Semester Prerequisite: THEA 120
Designed to introduce the acting student to the basic skills needed for working in front of the camera. Activities include scene study, learning basic terminology, and developing energy in front of the camera.

THEA 126  Advanced TV/Film Acting  2
Term Prerequisite: THTR 246
Semester Prerequisite: THEA 124
Advanced work in front of the camera. Students will perform contemporary scenes from plays, television or film, and perform a short monologue.

THEA 131  Studio Theatre Performance I  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Course includes rehearsal, performance, and evaluation of a contemporary script. Focus on an understanding and implementation of skills acquired in THEA 141 and the relationships experienced between actor and director.

THEA 132  Studio Theatre Performance II  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Course includes rehearsal, performance, and evaluation of a contemporary script, featuring Shakespeare or the classical Greeks. Focus on application of skills acquired in THEA 141 and on relationships between actor and director. Majors only.
THEA 141 Acting I - Contemporary
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Fundamentals of acting, including improvisational techniques; mask work; the physical, vocal, and internal development of character; and analysis and scoring by tests of a contemporary script. Majors only.

THEA 142 Acting II - Classics
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Fundamentals of acting in heightened context. Students will pursue improvisational work, mask work, and scoring. Students will develop an understanding of the power of language through verse, scansion and the physical, vocal, and internal development of characters from classical literature. Majors only.

THEA 153 Stage Voice I
Term Prerequisite: None
Semester Prerequisite: None
Basic techniques of expressive speech, vocal projection, and other stage-related communication methods. Examines the major physiological features of the speaking voice, control through abdominal breathing, practice of the phonetic alphabet, and reclamation of short passages.

THEA 154 Stage Voice II
Term Prerequisite: THR 152
Semester Prerequisite: THEA 153
Emphasis on more sophisticated style of voice for the stage, involving individual production requirements and the use of dialects.

THEA 171 Dramatic Form and Function I
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An analysis of modern contemporary classics of the theatre. The student will read and analyze a minimum of eight contemporary scripts from Ibsen to Shepard. The student will develop a comprehensive production concept for one of these scripts.

THEA 172 Dramatic Form and Function II
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Dramatic Form and Function II focuses on the writings of Shakespeare and the Classical Greeks. The student will read a minimum of eight classical scripts, analyze them using Aristotelian analysis, and research one script in terms of production styles through history.

THEA 181 Improvisation
Term Prerequisite: THR 250
Semester Prerequisite: THEA 120
By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development.

THEA 182 Advanced Improvisation
Term Prerequisite: THR 249
Semester Prerequisite: THEA 181
Students will develop performance materials for classroom presentation based on current issues of public concern selected by the instructor.

THEA 190 Aglitprop Theatre
Term Prerequisite: THR 250
Semester Prerequisite: THEA 120
This course is designed for non-majors and focuses on research and analysis of dramatic material from various cultures used as theatre of social change. THEA 190 is usually offered in an eight-week format.

THEA 191 Aglitprop Performance
Term Prerequisite: Departmental Approval
Semester Prerequisite: THEA 190
Students will rehearse and perform selected materials studied in THEA 190 for an invited audience. THEA 191 is usually offered in an eight-week format.

THEA 192 Scene Study
Term Prerequisite: THR 250
Semester Prerequisite: THEA 120
This course is designed for non-majors and focuses on analysis of contemporary scripts ranging from Ibsen to Shepard and Mamet. Students will study both dramatic and comedic material. THEA 192 is usually offered in an eight-week format.

THEA 193 Scene Study - Performance
Term Prerequisite: THR 263
Semester Prerequisite: THEA 192
Students will rehearse and perform selected comedic and dramatic scenes and present them for an invited audience. THEA 193 is usually offered in an eight-week format.

THEA 194 Acting Comedy Styles
Term Prerequisite: THR 250
Semester Prerequisite: THEA 120
Designed for non-majors, this course surveys comic material throughout theatrical history, studying the philosophical and psychological theories of comedy. The student will study six different comic styles. THEA 194 is usually offered in an eight-week format.

THEA 195 Acting Comedy Styles: Performance
Term Prerequisite: THR 267
Semester Prerequisite: THEA 194
Students will select five of the six comedic styles studied in THEA 194 to rehearse and perform for an invited audience. THEA 195 is usually offered in an eight-week format.

THEA 199 The Actor and the Playwright
Term Prerequisite: THR 250
Semester Prerequisite: THEA 120
This course is designed for non-majors and focuses on a different playwright each term. Students will read from the playwright's works, study scenes from his/her works, and analyze the contribution made by the given playwright to the theatre.

THEA 199 Performance: The Actor and the Playwright
Term Prerequisite: THR 258
Semester Prerequisite: THEA 198
Students will rehearse and perform scenes and monologues from chosen playwright's work for an invited audience. THEA 199 is usually offered in an eight-week format.

THEA 210 Theatre History
Term Prerequisite: None
Semester Prerequisite: None
Examination of the history of drama from primitive times to the present, introducing the overall pattern of theatre history with emphasis on European and American development. Required for all majors.

THEA 213 Stage Management
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the basic techniques of stage management, emphasizing the stage manager's responsibilities: the relationship of stage manager to the producer, director, designer, crew, cast; and techniques to work up production and rehearsal schedules, contact sheets, scene breakdowns, blocking directions and cueing of show.

THEA 216 Design Practicum II
Term Prerequisite: THR 215
Semester Prerequisite: THEA 116
Advanced studies in stage design concepts and practice. The student will learn specialized design and drafting methods as elements in the design process.

THEA 217 Beginning Lighting Design
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Beginning studies in lighting design concepts and practice. The student will learn: instrumentation; use of color and intensity; history of lighting; and will apply these to a design concept.

THEA 218 Scene Painting
Term Prerequisite: None
Semester Prerequisite: None
Designed to teach the basics of scene painting, including instruction in color theory, various brands and types of paint available, and the use of tools and techniques of scene painting.

THEA 219 Advanced Scene Painting
Term Prerequisite: THR 218
Semester Prerequisite: THEA 216
Advanced course designed to study in-depth techniques for scene painting.

THEA 220 Beginning Directing
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Student will learn: history of directing; staging; motivational blocking; relationship to actors and design staff, and will apply to staging of short scene or short one-act play.

THEA 221 Directed Study
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
Course for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction.
THEA 222  Directed Study  2
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
Directed study for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction.

THEA 223  Directed Study  3
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
Course for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction.

THEA 233  Studio Theatre Performance III  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Studio Theatre Performance III provides rehearsal and performance opportunities in oral interpretation and/or readers theatre presentations. Usually offered in eight-week format. Second-year theatre majors only.

THEA 234  Studio Theatre Performance IV  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Studio Theatre Performance IV provides rehearsal and performance opportunities with an emphasis on stage movement for the second-year theatre major. Usually offered in an eight-week format.

THEA 235  Studio Theatre Performance V  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Studio Theatre Performance V provides the second-year theatre major an opportunity to explore a specific theatrical period or style in both rehearsal and performance.

THEA 236  Theatre Special Projects  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Student will be given the opportunity to direct, design, produce, or perform in a touring production mounted by the College. Limited to individuals who have been selected as cast members or technical or design staff in scheduled tour.

THEA 237  Theatre Special Projects  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Student will be given the opportunity to direct, design, perform, or produce productions for College functions on the main stage or comparable space. Limited to individuals who have been selected as cast members or technical or design staff in a scheduled CCC performance.

THEA 238  Theatre Special Projects  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Student will be given the opportunity to direct, design, produce, or perform in college-supported outdoor theatrical events in the amphitheatre or a comparable space. Limited to individuals who have been selected as cast members or technical or design staff for summer season.

THEA 241  Acting III: Creating Theatre  2.5
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Explores acting techniques and styles of different historical periods and/or cultures. Student will survey a cross-section of acting styles and periods and then focus on in-depth exploration of particular period or style. Class limited to second-year majors. In-depth area of study selected by instructor.

THEA 251  Stage Voice for the Actor  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Course will cover strategies in vocal production and variety and will focus on exercises to develop vocal flexibility from Lessac, Linklater, and/or Berry techniques. The student will develop an understanding and will apply the phonetic alphabet and stage dialects. For second-year theater majors.

THEA 261  Movement for the Actor  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Course will cover strategies developing student's physical endurance, strength, flexibility, and grace. Student may explore movement to music, stage combat, pantomime, and/or dance styles, and techniques from many world cultures. For second-year theatre majors.

THEA 271  Dramatic Form and Function III  3
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Student will study a particular topic through different theatrical forms, plays, and historical periods. The class culminates in each student's selection of a topic and completion of research into the theatrical response to that topic. For second-year theater majors.

THEA 281  Advanced Improvisation II  1
Term Prerequisite: THTR 258
Semester Prerequisite: THEA 182
Students will continue to edit and polish the scripts and performances created in THEA 182. Students may also work improvisationally with local student groups to develop spontaneity, creativity, and cooperation.

THEA 283  Audition Workshop  1
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An intensive workshop in which participants prepare and polish audition materials suited for a professional audition or audition for advance training. Course usually taught by guest actors, agents, or teachers from larger theatrical or film markets.

THEA 285  Stage Makeup  2
Term Prerequisite: None
Semester Prerequisite: None
A course in the application of stage makeup to develop a character and to assist the actor in sustaining the character in performance. Emphasizes skills in the use of different kinds of makeup, hairstyling, and appearance changes.

THEA 289  Acting Styles I  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An elective course for advanced students, this course will give the student an opportunity to explore theatrical styles from musical theater to the Greeks. Style is selected by instructor previous to given term. Usually offered in eight-week format.

THEA 298  Acting Styles Performance  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students choose to rehearse and perform an in-class presentation of skills developed in THEA 285. Usually offered in eight-week format.

THEA 297  Acting Styles II  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
An elective course for advanced students, this course offers opportunity for students to explore specialized theatrical styles. Topic for study selected by instructor previous to given term. Usually offered in eight-week format.

THEA 298  Acting Styles Performance  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Students will rehearse and perform an in-class presentation of skills developed in THEA 297. Usually offered in eight-week format.

TRVL 100  Introduction to Travel Agency Operations  3
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the career opportunities in travel agency, airline, and tour escorting operations. Class is designed to provide an overview of the travel industry—past, present, and anticipated future.

TRVL 110  Travel Agency Ticketing Domestic/International  3
Term Prerequisite: TA 100 Recommended
Semester Prerequisite: TRVL 100 Recommended
The fundamentals of air scheduling, reading and correctly using domestic and international air tariffs and calculating the correct fares for air itineraries. Learning correct procedures for issuing accountable and non-accountable tickets.

TRVL 120  North American Travel  3
Term Prerequisite: None
Semester Prerequisite: None
History and development of the 50 U.S. states, Canada, and Mexico with specific location and identification projects. Major points of tourist interest will be discussed along with climate, ethnic influences, distances, and time zones.

TRVL 125  Foreign Country Travel II  3
Term Prerequisite: None
Semester Prerequisite: None
The history and development of Central America, South America, and the Caribbean with specific location and identification projects. These will include countries, capitals, principal cities, rivers, lakes, and mountains. Major points of tourist interest will be discussed along with climate, distances and time zones, passports, visas, and other entry requirements.
TRVL 130 Foreign Country Travel III 3
Term Prerequisite: None
Semester Prerequisite: None
A study of history and development of the Middle East and Europe, with specific location and identification projects. Major points of tourist interest will be discussed along with climate, distances and time zones, passports and visas, and other entry requirements.

TRVL 131 Foreign Country Travel IV 3
Term Prerequisite: None
Semester Prerequisite: None
A study of history and development of Africa, Asia, and the Pacific with specific location and identification projects. Major points of tourist interest will be discussed along with climate, distance, and time zones. Passports, visas, and other entry requirements will be covered.

TRVL 135 Airline/Airport Operations 3
Term Prerequisite: None
Semester Prerequisite: None
An introduction of tasks performed by airline and airport personnel along with the basic structure and functions of an airport and the airline carriers. Topics to be discussed include ticket counter operation, the gate area, cargo handling and loading, aircraft weight and balance, and various principles of aeronautics.

TRVL 140 Computer Reservation Training 3
Term Prerequisite: TA 100
Semester Prerequisite: TRVL 100/Ability to Type 30 WPM
This is the first class of a three class course in instruction and use of the American Airlines SABRE air reser systems. This course is designed to give the student the basic skills required for making airline computer reservations and use of SABREWORKS to create correspondence related to the travel industry.

TRVL 145 Introduction to Cruise Sales and Ground Transportation 3
Term Prerequisite: None
Semester Prerequisite: None
An analysis of cruise, railroads, car rentals, and bus transportation, including how to sell the above. Other information will include costs, selling techniques, and how to select the best transportation for your client using current profiles, listings, and reference materials, for domestic and international destinations.

TRVL 146 Seminar at Sea 2
Term Prerequisite: None
Semester Prerequisite: None
A seminar designed to develop a basic understanding of cruise lines and their ships. Students will be able to gain firsthand knowledge of cruise lines and port facilities and also have dialogue with cruise ship staff members and observe daily cruise activities.

TRVL 150 Tourism/Travel Operations 3
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the principles of tourism, practices, and philosophies and offers a practical and realistic education in the business of tourism.

TRVL 170 Opening/Operating/Managing a Travel Agency 3
Term Prerequisite: None
Semester Prerequisite: None
The description and explanation of the procedures involved in starting a new travel agency or acquiring an existing agency. The advantages and disadvantages of co-ops, consortiums, and franchising will also be discussed. This course will provide insight into travel agency operations from a management perspective.

TRVL 180 Your Career/Flight Attendant 3
Term Prerequisite: None
Semester Prerequisite: None
To provide information and practical knowledge of a career as a flight attendant via lectures, discussion, films, and demonstrations both in the classroom and on an aircraft. Information on the duties and responsibilities of the pilot and flight crew will be discussed.

TRVL 190 Internship and Seminar 3
Term Prerequisite: Credits in TA Program
Semester Prerequisite: Credits in TRVL Program
Available to students who have completed or are approaching 200 hours of work experience in tourism or travel agency operations. A term project is required.

TRVL 200 Profitable Travel Sales, Marketing, and Counseling 3
Term Prerequisite: None
Semester Prerequisite: None
An introduction to methods and techniques used in the modern travel agency covering the marketing environment, identifying consumer needs, and examining the product, price, and promotion. To accomplish the above, the art of negotiation, role playing, telephone etiquette, and human relations skills will be included in the course content.

TRVL 210 Group Travel/Escorting Operations 3
Term Prerequisite: None
Semester Prerequisite: None
An overview of group tours and tour escorting operations, and policies and procedures required by most tour companies. Content includes: how to locate groups, how to organize group travel, how to assemble the group tour package, and how to be an effective tour leader.

TRVL 220 International Relations 3
Term Prerequisite: None
Semester Prerequisite: None
Discusses political, social, and economic relationships between countries and their effects on the travel and tourism industry. Defining and discussing cultural differences, introducing foreign currencies, discussing travel tips, and adjusting to intercultural living experience.

TRVL 230 Travel and Tourism Law and Current Events 3
Term Prerequisite: None
Semester Prerequisite: None
A course for travel agents and their personnel, as well as individuals interested in travel agency operations. Creates an awareness of the responsibilities and rights with which the law imparts. The course will also discuss the consequences caused by failure in those responsibilities.

TRVL 250 Advanced Computer Ticketing 3
Term Prerequisite: TA 110, TA 240
Semester Prerequisite: TRVL 110, TRVL 140
The course will begin with review of materials learned in TRVL 140 and progress to pricing and ticketing, followed by fare construction, fare rules, car and hotel reservations, SABREVISION, the hotel display with pictures and maps, will be utilized, and further uses of SABREWORKS will be taught.

TRVL 255 Advanced Sabre Training 3
Term Prerequisite: TA 240, TA 250
Semester Prerequisite: TRVL 250
A course designed to give extended use of the American Airlines SABRE computer. Skills will be taught in the expanded capabilities of the computer in use of international reservations and ticketing, tour bookings, fare storing, and destination information. Skills taught in the use of SABREWORKS, using spreadsheets and databases.

TRVL 260 Travel Agency Accounting 3
Term Prerequisite: None
Semester Prerequisite: None
A course designed to explain and describe basic travel agency accounting concepts. Approximately one-half of the course will be dedicated to the computer in use of international reservations and ticketing, tour bookings, fare storing, and destination information. Skills taught in the use of SABREWORKS, using spreadsheets and databases.

VCBL 109 Vocabulary Improvement I 2
Term Prerequisite: None
Semester Prerequisite: None
Knowledge of and extensive practice with word parts (roots, prefixes, and suffixes) are used to develop skills in building vocabulary. Emphasis given to correct oral and written usage, dictionary skills, and mastery of troublesome words.

VCBL 110 Vocabulary Improvement II 2
Term Prerequisite: VCB 131/Placement Test
Semester Prerequisite: VCB, 109/Placement Test
Builds on skills developed in Vocabulary Improvement I. Word memory, detecting word meaning from context, using dictionary, mastery of roots, prefixes, suffixes) by applying previously mastered roots and skills to learning new, advanced, and career words.

WELD 100 Combination Welding 4
Term Prerequisite: None
Semester Prerequisite: None
This is a beginning theory and practice course which will introduce the safe operations and applications of oxyethylene 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.

WELD 101 Advanced Arc Welding 4
Term Prerequisite: WLD 100
Semester Prerequisite: WELD 100
Will develop the skills necessary to produce quality multipass 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 arc introduced.
WELD 110 - WRT 262

WELD 110  Gas Metal Arc Welding  4
Term Prerequisite: WLD 100
Semester Prerequisite: WLD 100
Provides technical understanding and applications of gas metal arc welding and flux cored arc welding. Fundamentals, safety, equipment adjustments, metal transfer, arc weld, and gas welding processes will be covered. Developmental skill in all positions on different thicknesses and types of metals, including basic programming of an automated robot cell.

WELD 111  Gas Tungsten Arc Welding  4
Term Prerequisite: WLD 100
Semester Prerequisite: WLD 100
Will develop the skills, principles, and applications of gas tungsten arc welding and fabricate welds. Welds will be done on different thicknesses of ferrous and non-ferrous metals in all positions. Proper material cleaning, fit up, and safety are also introduced.

WELD 120  Structural Fabrication and Inspection  4
Term Prerequisite: WLD 101
Semester Prerequisite: WLD 101
Introduction to steel fabrication in accordance with the American Welding Society Structural Welding Code D1.1 applications and requirements. The student will be introduced to the numerous destructive and non-destructive methods of welding inspections. Satisfactory completion of this course will assist the student in passing a welding certification test.

WELD 125  Structural Blueprint Reading for Welders  2
Term Prerequisite: ATM 150
Semester Prerequisite: TECH 100
Blueprint and welding symbols are the universal language of the welding industry. It is developed for students, apprentices, technicians, and others who must develop the ability to read and accurately interpret blueprints. Teaches awareness of the advancement in metallurgy, welding processes, consumables and strict code enforcement used in industry today.

WELD 140  Creative Welding  2.5
Term Prerequisite: WLD 100
Semester Prerequisite: WLD 100
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 opportunity to explore creative expression.

WELD 194  Welding Project Lab  4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Further welding skills in maintenance welding, production welding, resistance welding and/or tool and die welding, depending on the direction the student would like to take his/her welding skills.

WELD 201  Tool and Die Welding  4
Term Prerequisite: WLD 101, WLD 103, ATR 142
Semester Prerequisite: WLD 101, WLD 110, MACH 135
Theories and practical methods involved in welding various alloyed metals, preheating and postheating of metals, recognition of materials, alloying elements, and their effects. Also, the proper usage of air, oil, and water hardening steels.

WELD 205  Pipe Welding  4
Term Prerequisite: WLD 101, WLD 115
Semester Prerequisite: WLD 101, WLD 120
Theory, cutting, fitting, 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.

WELD 210  Aircraft Welding  2
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Presents welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aviation maintenance techniques.

WRT 005  Writing Laboratory  0
Term Prerequisite: None
Semester Prerequisite: None
WRT 005 arranges the days and times when students will attend writing lab courses. Students must register for both a writing lab course, such as WRT 112, and a section of WRT 005.

WRT 110  Confidence in Writing  4
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Designed to help students understand the writing process, reduce writing anxiety, and develop basic writing skills. Emphasizes planning, composing, and revising strategies for expository writing. Provides frequent writing practice in a supportive workshop environment.

WRT 112  Fundamentals of Writing  4
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
An individualized course to help students prepare for freshman writing. Builds confidence and increases fluency. Develops skill in choosing words and writing sentences, paragraphs, and brief essays. Includes laboratory activities with professional tutorial assistance and group work in weekly class meetings. Requires enrollment in WRT 005 to schedule lab attendance.

WRT 116  Grammar and Mechanics in Writing  4
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Designed to help students master, in their own writing, the major grammatical and mechanical skills expected of students doing college-level writing. Also includes work on content development, organization, reading skills, and editing skills.

WRT 118  Seminar: Personal Writing  3
Term Prerequisite: None
Semester Prerequisite: None
Explores the various forms of personal writing (diaries, journals, letters, personal narratives, and autobiography) through written exercises and selected readings. The student's observations and life experiences are the focus of written assignments. Emphasizes language, style, and tone appropriate to the different forms of personal writing.

WRT 119  Business Writing: Grammar and Mechanics  3
Term Prerequisite: Placement Test
Semester Prerequisite: Placement Test
Designed to meet the demands of business writing. Course components include study of grammar, punctuation, and style of business prose. Revision and proofreading skills necessary for appropriate business correspondence are emphasized through practice and testing.

WRT 121  Composition I  4
Term Prerequisite: None
Semester Prerequisite: None
The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes content development, organization, and style, and includes instruction in basic library skills. Students will write summaries, reports and analytical expository and argumentative essays. Some sections use word processing.

WRT 122  Composition II  4
Term Prerequisite: WRT 121/ENG 122
Semester Prerequisite: WRT 121
Builds upon the writing skills developed in WRT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use word processing.

WRT 131  Honors Composition I  4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Covers the same material as WRT 121 but with additional work to challenge the superior writer.

WRT 132  Honors Composition II  4
Term Prerequisite: Departmental Approval
Semester Prerequisite: Departmental Approval
Covers the same material as WRT 122 but with additional work to challenge the superior writer.

WRT 195  Seminar: Writing User Documentation  3
Term Prerequisite: None
Semester Prerequisite: None
Designed for data processing students and professionals. Teaches students to write effective documentation for users of computer systems. Focuses on written step-by-step procedures explaining the responsibilities and activities of users. Emphasizes the clear, precise communication necessary for successful system operation and smooth work flow.

WRT 262  Seminar in Prose Style  3
Term Prerequisite: None
Semester Prerequisite: None
An advanced study of non-fictional prose writing. Extensive directed practice helps experienced writers make their own writing clear, precise, direct, and graceful. Workshop sessions include a study of the expectations and choices in various types of writing, and of the relationships among purpose, structure, words, sentences, grammar, punctuation, and style.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>WRIT 269</td>
<td>Seminar: Reviewing The Arts</td>
<td>3</td>
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<tr>
<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<tr>
<td></td>
<td>Semester Prerequisite: WRIT 122/ENGL 122/Departmental Approval</td>
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<tr>
<td></td>
<td>Develops criteria for evaluating the visual and performing arts, music, and literature. Sharpens the student's skills as a reviewer of the arts through reading, writing, and viewing mass media presentations, exhibits, and performances on and off campus. Concepts of form, content, style, and medium of expression will be introduced.</td>
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<tr>
<td>WRIT 281</td>
<td>Seminar: Writing For Publication</td>
<td>3</td>
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<tr>
<td></td>
<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td></td>
<td>Study of freelance writing and marketing, with focus on non-fiction. Students review a variety of effective writing techniques, study marketing information for their particular fields such as analyses of potential publishers and query letters, and discuss their writing in a workshop setting. Students prepare manuscripts for submission to editors. Word processing available.</td>
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<tr>
<td>WRIT 282</td>
<td>Seminar: Forum For Authors</td>
<td>3</td>
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<tr>
<td></td>
<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td></td>
<td>An advanced course in freelance writing for authors working on manuscripts. Students meet in a workshop setting to refine ideas, critique writing, solve problems, and develop material for submission to periodical or book editors. Includes advanced study of effective writing techniques and market information. Occasional speakers. Word processing available.</td>
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<tr>
<td>WRIT 285</td>
<td>Creative Writing I</td>
<td>3</td>
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<tr>
<td></td>
<td>Term Prerequisite: None</td>
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<td></td>
<td>Semester Prerequisite: None</td>
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<td></td>
<td>WRIT 285 is designed to help students develop expressive abilities in writing poetry and short stories. Emphasizes narrative modes of the short story, traditional meter, and free verse forms of poetry. Includes models from students and masters in both fiction and poetry.</td>
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<tr>
<td>WRIT 286</td>
<td>Creative Writing II</td>
<td>3</td>
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<tr>
<td></td>
<td>Term Prerequisite: WRIT 293</td>
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<tr>
<td></td>
<td>Semester Prerequisite: WRIT 285/Departmental Approval</td>
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<td>Emphasizes improving the ability to write effective poems, short stories, and novellas. Students select their own subjects and receive immediate responses through group discussion.</td>
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<tr>
<td>WRIT 287</td>
<td>Writing Workshop</td>
<td>3</td>
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<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td>Examines language and style as the most critical choices a creative writer makes in directing the reader's perception of and response to the work. Develops the writer's ability to control tone and style. Manuscripts will be reproduced and discussed in a workshop setting.</td>
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<tr>
<td>WRIT 295</td>
<td>Independent Study in Writing I</td>
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<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<tr>
<td></td>
<td>Individual projects in writing or journalism. Students will spend at least two hours a week for each credit in Independent Study.</td>
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<tr>
<td>WRIT 296</td>
<td>Independent Study in Writing II</td>
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<tr>
<td></td>
<td>Term Prerequisite: Departmental Approval</td>
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<tr>
<td></td>
<td>Semester Prerequisite: Departmental Approval</td>
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<td></td>
<td>Individual projects in writing or journalism. Students will spend at least two hours a week for each credit in Independent Study.</td>
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</table>
Special Courses
The following courses are generally not offered for enrollment by individual students. These courses are designed in cooperation with various organizations such as businesses, governmental agencies, school districts, labor organizations, or other groups to meet their special needs. For additional information, please contact the Community Service and Continuing Education Division.

**DESCRIPTIOns**

**CADD 100  BRowse**

Term Prerequisite: None
Semester Prerequisite: None
This is an introductory computer graphics course intended for the manager or casual CADAM user. The course is intended to reveal insights regarding contents and access to CADAM files for checking drawings and confirming dimensions.

**CADD 105  CADAM Overview**

Term Prerequisite: None
Semester Prerequisite: None
This is an introductory computer graphics course intended for the manager or casual CADAM user. The course is intended to reveal insights regarding using the files, checking drawings, and confirming dimensions. Emphasis will be placed on using point, line, circle, and spline functions to create an object.

**CADD 110  Basic 2-D Update**

Term Prerequisite: CG 201
Semester Prerequisite: CADD 200
This course introduces the experienced “2-D Base CADAM” operator to the new version of Update software. The purpose will be to apply new functions and menu options to job-related tasks. New methods and related modules will be explored. Functions such as engineering change mark up, design build manage and kinematics will be exposed.

**CADD 115  Basic 3-D Update**

Term Prerequisite: CG 275
Semester Prerequisite: CADD 110
This course introduces the experienced “2-D Interactive” operator to the new version Update software. The purpose will be to apply new functions and menu options to job-related tasks. New methods and related modules will be explored. Three-dimensional surfaces, intersections, projections, and cross sections will be used to develop engineering drawings.

**CADD 130  AutoCAD: Basic**

Term Prerequisite: Drafting Experience
Semester Prerequisite: Drafting Experience
Introduction to AutoCAD software. Creation of 2-D multiview mechanical drawings with dimensions and notes will be the main focus. Use of AutoCAD's layer, block, plot commands, and isometric views will also be covered in this course.

**CADD 135  AutoCAD Advanced**

Term Prerequisite: Drafting Knowledge
Semester Prerequisite: Drafting Knowledge
A computer graphics course designed to teach the software package called AutoCAD. Using AutoCAD, the student will draw a mechanical drawing complete with dimensions and notes. Emphasis will be placed on creating and editing mechanical drawings.

**CADD 140  AutoCAD 3-D**

Term Prerequisite: CG 351
Semester Prerequisite: CADD 105
A computer graphics course designed to teach the software package called AutoCAD. Using AutoCAD, the student will draw a mechanical drawing complete with dimensions and notes. Emphasis will be placed on creating and editing mechanical drawings.

**CADD 150  Basic IBM CAD Seminar**

Term Prerequisite: None
Semester Prerequisite: None
This is a one-day computer graphics seminar which introduces IBM CAD. Covered are the IBM CAD command structure, creating and modifying geometry, both 2-D and 3-D, and images and raster conversion.

**CADD 180  Basic Unigraphics**

Term Prerequisite: Drafting Experience
Semester Prerequisite: Drafting Experience
This is an introductory course covering the fundamentals of interactive graphics and precedes all other Unigraphics training. Basic 2-D concepts and functions of the system are covered in depth, with an introduction to 3-D development principles and concepts.

**CADD 181  Unigraphics 3-D Design**

Term Prerequisite: CG 190
Semester Prerequisite: CADD 180
This course provides users with an intensive background covering the fundamentals of 3-D modeling. Students will be provided with the analysis, development, and implementation of 3-D modeling techniques for design, drafting, and machining as appropriate.

**CADD 182  Unigraphics Assembly and Components**

Term Prerequisite: CG 190
Semester Prerequisite: CADD 180
The assembly and components feature of Unigraphics provides the users with the ability to manage and organize several different part files which share common data of components, sub-assemblies, and assemblies. The student will understand the concepts and application of the assembly and components module to the management and sharing of common component part files across several assembly models from both the top-down and bottom-up modeling approaches.

**CADD 183  Unigraphics Advanced Surfacing**

Term Prerequisite: CG 190
Semester Prerequisite: CADD 180
The advanced surfacing features of Unigraphics provides the user with the ability to model complex free-formed surfaced parts typically used within the automotive industry for sheet metal applications, component designs, engine designs, and die designs. This advanced course provides the user with an in-depth background in the topics of B-spline creation and editing, B-surface construction and manipulation, surface trimming, deviation checking, and curvature analysis.

**CADD 184  Unigraphics Comprehensive CAD Design**

Term Prerequisite: CG 180, 3-D Design Experience
Semester Prerequisite: CADD 180, 3-D Design
This course provides users that have previous three-dimensional modeling experience an intensive course covering the Unigraphics fundamentals of 3-D modeling and drafting techniques. The course is designed to provide an overview of all facets of the Unigraphics CAD Applications.

**CADD 185  Unigraphics Drafting**

Term Prerequisite: CG 180
Semester Prerequisite: CADD 180
This course provides users with an intensive background covering the fundamentals of 3-D drafting, geometric dimensions and tolerances, and drafting control. Students such as designers, drafters, checkers, drafting persons, and engineers will be provided with the knowledge required to produce and plot quality drawings using Unigraphics.

**CADD 188  Unigraphics 3-D Workshop**

Term Prerequisite: CG 180
Semester Prerequisite: CADD 180
This course provides users with an increased understanding of 3-D geometric modeling and drafting techniques. Students will be provided with productivity tips such as macros and the opportunity to review development and implementation of 3-D dimensional modeling.

**CADD 200  Drafter**

Term Prerequisite: CG 150
Semester Prerequisite: CADD 105
This is an informative computer graphics course intended for the potential CADAM user. Emphasis will be placed on using basic functions to develop or work with production drawings. The operator will be exposed to multi-view orthographic projection, placement, and miscellaneous items, oblique projections, isometric projections, and detail pages.

**CADD 205  Advanced Drafter**

Term Prerequisite: CG 301
Semester Prerequisite: CADD 200
This course is a continuation of CADAM Basic and covers advanced CADAM functions. Also, analysis techniques and on-the-job training applications are taught.

**CADD 210  Designer**

Term Prerequisite: None
Semester Prerequisite: None
Designer is structured for engineers, designers, and draftspersons to acquaint them with CADAM 3-D interactive, CADEX, and AEC applications.

**CADD 215  3-D Interactive**

Term Prerequisite: CG 201
Semester Prerequisite: CADD 200
This course is intended to introduce the experienced CADAM operator to the 3-D Interactive module. The purpose will be to design components from 2-D and also generate 2-D from 3-D models. The model will contain wireframe geometry as well as surfaces. Intersections and projection sections will be utilized to create shop drawings.
CADD 220 Advanced 3-D
Term Prerequisite: CG 271
Semester Prerequisite: CADD 215
This course is intended to provide the experienced CADAM operator with techniques used in applying 3-D Interactive. Students will be required to supply a sample 3-D drawing. The purpose is to provide the student with an approach to solve any 3-D design or manufacturing co-related project.

CADD 225 Interactive Solids Design
Term Prerequisite: CG 201
Semester Prerequisite: CADD 200
This course is intended to introduce the experienced CADAM operator to the 3-D Interactive Solids module. The purpose will be to generate components as 3-D solids, to obtain clearances, volumes, and mass properties with given densities. The solid will include all views, sections, partial views, projections, intersections, and script files.

CADD 230 AEC Design Base
Term Prerequisite: CG 201
Semester Prerequisite: CADD 200
This course will introduce the student to CADAM’s powerful AEC design system producing a competitive edge by saving time and money throughout the life cycle of a project from design, to maintenance, to expansion. The material will be presented through lecture, demonstration, and practice exercises.

CADD 235 Facilities Layout and Design
Term Prerequisite: None
Semester Prerequisite: None
Architecture/Engineering/Construction (AEC) and Facilities Management (FM) functions on the CADAM system are covered. Lectures, demonstrations, discussions, and terminal exercises will be used.

CADD 240 3-D Piping
Term Prerequisite: CG 212
Semester Prerequisite: CADD 230
CADD AEC Design Base/3-D Piping is a comprehensive design system that provides piping designers and drafters with the tools necessary for piping design work. The CADD AEC-3D Piping course introduces students to the application and functionality of the system software.

CADD 245 CADEX
Term Prerequisite: CG 201
Semester Prerequisite: CADD 200
This course is intended to introduce the experienced CADAM operator to CADAM electrical schematic capture. The purpose will be to design and utilize functions and menu items related to automotive applications to create shop drawings.

CADD 250 CADEX Mechanical Applications
Term Prerequisite: CG 201
Semester Prerequisite: CADD 200
This course combines lectures and discussions with mechanical assemblies or libraries, using hands-on practices. Topics covered in the course include attributing CADAM geometry, creating part data base libraries, developing component sets, and producing reports such as wire-to-from lists and Bills of Materials.

CADD 255 Basic NC
Term Prerequisite: None
Semester Prerequisite: None
Introductory course in adding numerical control data to the CADAM model geometry. Cutter diameter, path, feed rates, spindle speeds, etc., will be developed for three-axis milling machines and lathes. Procedures for producing the NC program will be discussed.

CADD 260 Advanced Numerical Control
Term Prerequisite: CG 361
Semester Prerequisite: CADD 255
Continuation of CADDAM Basic NC with emphasis on developing skill in manual programming of two and three-axes, point-to-point positioning, and numerically controlled machine tools.

CADD 265 Lathe
Term Prerequisite: None
Semester Prerequisite: None
The CADAM Lathe course provides automatic generation of tool-path data for a wide variety of lathe operations, including roughing, drilling, boring, finishing, and threading.

CIVIL 100 Technical Orientation
Term Prerequisite: None
Semester Prerequisite: None
Introduction to the Michigan Department of Transportation: defining the role of the department, functions of the various divisions, and how they relate to each other. Designed to acquaint the student with the nature of work performed by technicians.

CIVIL 129 Survey Refresher
Term Prerequisite: None
Semester Prerequisite: None
This course provides survey training for recently graduated civil engineers. Emphasis is on practical application and use of equipment.

CIVIL 130 Highway Concrete Inspection
Term Prerequisite: None
Semester Prerequisite: None
This course covers the determination of properties of density, concrete, and bituminous materials. Methods of sampling and testing bituminous concrete mixes and the density of various materials are taught. Introduces mix designs and concrete/bituminous designs.

CIVIL 180 Concrete Technician
Term Prerequisite: Instructor Approval
Semester Prerequisite: Instructor Approval
This course is sponsored by the Michigan Ready Mix Concrete Association and the Portland Cement Association to train students to receive certification as a concrete technician—Michigan Level I, Concrete Field Testing Technician, and Michigan Level II, Concrete Technician. Both Level I and Level II are ACI approved programs.

CIVIL 181 Concrete Technician Level I
Term Prerequisite: None
Semester Prerequisite: None
This course is sponsored by the Michigan Concrete Association and the Portland Cement Association to train students to receive certification as a concrete technician—Michigan Level I, Concrete Field Testing Technician. Level I is an ACI approved program.

CIVIL 189 Concrete Paving
Term Prerequisite: On-the-job Construction Experience/Appropriate Technical Training
Semester Prerequisite: On-the-job Construction Experience/Appropriate Technical Training
This is a course on the practical aspects of inspection and quality control of Portland Cement concrete paving projects.

CIVIL 250 Interactive Graphics Road Design System I (IGRDS I)
Term Prerequisite: LAT 203
Semester Prerequisite: GRET 203
Interactive Graphics Road Design System I is a comprehensive set of computer processes for roadway design. The capabilities provided by these processes help the designer to establish horizontal and vertical alignments, enter terrain data from a digital terrain model, and display existing ground profiles.

CIVIL 255 Interactive Graphics Road Design System II (IGRDS II)
Term Prerequisite: CT 250
Semester Prerequisite: CIVIL 250
Interactive Graphics Road Design System II is a comprehensive set of computer processes for roadway design. Capabilities provided by these processes help the designer to define the roadway template, side-slope, and median dimensions, develop and modify design cross sections, and compute earthwork quantities. Generate contour and perspective views.

ENGL 099 Seminar: Life in Literature
Term Prerequisite: None
Semester Prerequisite: None
Students will look at life in literature. Students will read selected literary works in order to understand the craft of the writer revealing life through literature.

FIRE 281 Fire Science Project Lab
Term Prerequisite: Approval
Semester Prerequisite: Coordinator Approval
This course is designed to undertake and complete an independent study or project under direct supervision.

FIRE 282 Fire Science Project Lab
Term Prerequisite: Approval
Semester Prerequisite: Coordinator Approval
This course is designed to undertake and complete an independent study or project under direct supervision.

FIRE 283 Fire Science Project Lab
Term Prerequisite: Approval
Semester Prerequisite: Coordinator Approval
This course is designed to undertake and complete an independent study or project under direct supervision.

FIRE 284 Fire Science Project Lab
Term Prerequisite: Approval
Semester Prerequisite: Coordinator Approval
This course is designed to undertake and complete an independent study or project under direct supervision.
FIRE 290 Fire Officer Seminars
Term Prerequisite: Departmental Approval
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of eighteen individual weekend seminars leading to certification as Fire Officer I, II, III. These courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter’s Training Council.

GRE 216 Introduction to Microstation Workshop
Term Prerequisite: None
Semester Prerequisite: None
This is a workshop to introduce the student to the basics of Microstation. Microstation supports a range of commands for placing and manipulating elements in the design file. A student can apply these commands for either a Microstation personal computer setup or the INCOMIX-SQL:nd Base II Plus database packages. The workshop is designed for Intergraph Workstation lab use, as well as the Microstation PC.

GRE 218 GIS Design Workshop
Term Prerequisite: None
Semester Prerequisite: None
Data base design entails identification of relevant data sources, applying cartographic standards, and managing a tabular database scheme that will relate to cartographic layers in the GIS. Tools and techniques for data identification and composition are presented in the context of an example design for a municipal GIS, with emphasis on geodetic reference frame, base map, and cadastral overlay.

GRE 219 Data Sets for GIS Workshop
Term Prerequisite: None
Semester Prerequisite: None
This workshop focuses on available commercial and public domain data sets for GIS. Three data sets are completely described and documented according to cartographic characteristics, and managing a tabular database scheme that will relate to cartographic layers in the GIS. Tools and techniques for data identification and composition are presented in the context of an example design for a municipal GIS, with emphasis on geodetic reference frame, base map, and cadastral overlay.

GRE 254 Orientation to ARC/INFO
Term Prerequisite: LAT 282/Equivalent Computer Course
Semester Prerequisite: LAT 282/Equivalent Computer Course
This course is an introduction to the use of the ARC/INFO software. ARC/INFO is a leading product used in the design of Geographic Information Systems. Basic product use and modeling will be demonstrated. There will be hands-on experience in the lab.

HMFS 160 Hotel/Motel Internship
Term Prerequisite: None
Semester Prerequisite: None
A seminar class for hotel-restaurant management students who are participating in Program Hermadand and have completed or are approaching 200 hours of work experience in the hospitality industry.

HMFS 170 Menu Design and Layout
Term Prerequisite: None
Semester Prerequisite: None
This course includes the basics in menu planning, analysis, and pricing. Menu layout and design fundamentals are covered; the integration of the menu into the operational aspects of purchasing, production, and service is explored. Project required.

HMFS 177 Introduction to Hotel and Food Service Operations
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the Hotel-Motel-Food service industry, its management departments, and responsibilities, designed specifically for Japan Adventure/Motel students.

HMFS 178 Practicum in Japanese Culture
Term Prerequisite: None
Semester Prerequisite: None
Introducing the principles and philosophy of Japanese calligraphy, the use of abacus, and the understanding of various types of Japanese traditional dressers. Practical training in calligraphy and abacus.

HMFS 179 Practicum in Japanese Culture
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dressers. Practical training in calligraphy and abacus.

HMFS 180 JA Internship
Term Prerequisite: None
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company.

HMFS 181 JA Internship
Term Prerequisite: None
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company.

HMFS 182 JA Internship
Term Prerequisite: None
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company.

HMFS 183 Practicum in Japanese Culture
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dressers. Practical training in calligraphy and abacus.

HMFS 184 Practicum in Japanese Culture
Term Prerequisite: None
Semester Prerequisite: None
Introducing the philosophies of different schools of flower arrangement. Learning the basic skills in flower arrangements.

HMFS 185 Practicum in Japanese Culture
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dressers. Practical training in calligraphy and abacus.

HMFS 186 Japan Adventure Orientation
Term Prerequisite: Program Approval
Semester Prerequisite: Program Approval
An orientation into Japan as a society and people designed to acquaint the Japan Adventure students to their new environment.

HMFS 187 Japan Horizon Internship
Term Prerequisite: None
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company.

HMFS 188 Japan Horizon Internship
Term Prerequisite: None
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company.

HMFS 189 HT/MT Internship
Term Prerequisite: None
Semester Prerequisite: None
A seminar class for Hotel-Restaurant management students who are participating in Program Hermadand and have completed or are approaching 200 hours of work experience in the hospitality industry.

HSAB 009 Auto Body
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This is a fee-for-service program developed for Eaton Intermediate School District. Enrollment is limited to their students only.

HSAS 101 Pre-Allied Health Careers
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
Designed to explore and present the basic applied concepts of biological sciences, physical science, and human interaction fundamentals necessary to pursue training as a health-care professional.
HSAM 010 Auto Mechanics
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This is a fee-for-service program developed for Eaton Intermediate School District. Enrollment is limited to their students only.

HSAT 040 Architectural Drafting
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This is a one-year continuous course of instruction for EISD students. This course is initially centered around basic concepts of orthographic projection, sketching, lettering techniques, and dimensioning. Emphasis will shift to identifying component parts and correctly drawing various building details. Basic model building using various materials to construct architectural study models will be taught.

HSBK 015 Banking Operations
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
An introductory course in banking covering the following topics: data processing for bankers, principles of banking, marketing for bankers, and customer relations.

HSBK 016 Banking Operations
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
An introductory course in banking covering the following topics: consumer lending, Lotus 1-2-3, and teller training.

HSCA 105 EISD Commercial Art I
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
HSCA 105 and HSCA 106 form a one year non-articulated program for high school students. Commercial art techniques for graphic arts pre-production production emphasizing studio skills, lettering, typography, and layout design.

HSCA 106 EISD Commercial Art II
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
HSCA 105 and HSCA 106 form a one year non-articulated program for high school students. Commercial art techniques for graphic arts pre-production production emphasizing studio skills, lettering, typography, and layout design.

HSCS 101 Computer Information Systems First Semester for Eaton ISD 6
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This course provides high school vocational students an opportunity to earn college credit for Introduction to Computer Information Systems (CISB 100) and Introduction to DOS (CISB 104). This course covers topics in retailing, marketing, small business management, and employability skills. Students will gain a basic understanding of the principles of marketing and retailing. Students will complete a business plan on a business of their choice and a personal resume.

HSCS 102 Computer Information Systems Second Semester for Eaton ISD 6
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This course provides high school vocational students an opportunity to earn college credit for Advanced Microcomputer Applications (CISB 105) and dBASE Programming (CISB 210).

HSOT 030 Industrial Drafting
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This is a one-year continuous course of instruction for EISD students. This course is initially centered around basic concepts of orthographic projection, sketching, lettering techniques, and dimensioning. Emphasis will shift to more detailed work with orthographic projection, sections, and auxiliary views. More advanced techniques will be introduced, along with preparation of welding or fabrication type drawings.

HSEC 010 EISD Electronics I
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
An introduction to DC and AC theory is presented. Students cover the same material as ELCT 111. Emphasis is placed on hands-on learning through the use of laboratory exercises.

HSEC 020 EISD Electronics II
Term Prerequisite: EISD Student
Semester Prerequisite: EISD Student
This course continues the electronic fundamentals begun in HSEC 010. Students cover the same material as ELCT 112 and ELCT 131 (transistors and digital basics). Emphasis is placed in learning through the use of lab exercises.

HSAM 010 Industrial Automation Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

IASC 001 Industrial Automation Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

IASC 002 Industrial Automation Seminar II
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.
IASM 003 Industrial Automation Seminar III
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon class requirement.

IASM 004 Industrial Automation Seminar IV
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

LAND 290 Exploring the World of Computers
Term Prerequisite: None
Semester Prerequisite: None
This course will familiarize the green industry professional with an overview of available hardware and software systems and the configurations for a landscape or nursery operation. There will be experimentation with different software packages such as LandCADD, CAPS, LAND Design Ware, and JACKSCOM as well as related landscape design, site planning, management scheduling, and cost estimating areas.

LAND 298 Pesticide Applicator Certification
Term Prerequisite: None
Semester Prerequisite: None
The purpose of this course is to prepare the student for certification as a commercial applicator of pesticides for turfgrass and ornamental plants. Under the Michigan Pesticide Control Act, individuals applying pesticides for hire must be certified or be supervised by a certified applicator. Course topics include IPM techniques, turfgrass and ornamental pest identification, and proper pesticide handling and application.

LAND 299 LandCADD Training
Term Prerequisite: CG 351
Semester Prerequisite: CADD 135
A program for the individual with basic computer and AutoCADD exposure interested in learning more about computer-aided design using the LandCADD software package. The LandCADD site planning package will be explored fully along with some additional modules like E-Z estimate (cost estimating) package, plant materials data base, simulated plant growth, and quadrangles (land form).

MDCR 201 Assertive Training
Term Prerequisite: None
Semester Prerequisite: None
This one-day seminar is designed to introduce participants to some of the principles and dynamics of assertive behavior. It will help participants identify and accept their basic interpersonal rights while respecting the rights of others.

MDCR 224 Introduction to Negotiating Skills
Term Prerequisite: None
Semester Prerequisite: None
Certain basic negotiating skills can be applied to a number of different situations both business and personal. This training will focus on strategies for conducting negotiation sessions with employees, customers, and suppliers. It will not cover strategies for negotiating union contracts.

MDCR 227 Effective Board Training
Term Prerequisite: None
Semester Prerequisite: None
The purpose of this seminar is to provide participants with knowledge, skills, and attitudes for serving in voluntary, elected, or appointed positions on boards, committees, and commissions in government, business, and human service.

MDCR 242 Consultative Selling
Term Prerequisite: None
Semester Prerequisite: None
This seminar is based on a combination of education, experience and application. It is a comprehensive and in-depth look at the tools and techniques available to expand current sales knowledge and develop new sales skills for the sales professionals.

MDCR 245 Customer Service
Term Prerequisite: None
Semester Prerequisite: None
All employees have the potential for creating good customer relations and improving the image of the organization. The critical factors include increased motivation through a positive mental attitude, effective communication with different types of customer personalities, sensitive handling of customer complaints, and successful strategies for meeting needs to satisfy customers.

MDCR 252 Supervisory Skills Training
Term Prerequisite: None
Semester Prerequisite: None
This seminar is an 8-hour program that will address the basic concepts and skills for new supervisors in addition to providing some self-assessment.

MDCR 264 Leading Effective Meetings
Term Prerequisite: None
Semester Prerequisite: None
The purpose of this seminar is to help participants develop the skills necessary for leading effective meetings. These include many facets of planning and preparing for a meeting, conducting a meeting, and following up on a meeting.

MDCR 275 Establishing Dynamic Leadership
Term Prerequisite: None
Semester Prerequisite: None
Dynamic leaders create visions and translate those visions into reality within their organizations. This seminar describes the essential features and functions of dynamic leadership in the context of the present world market. Participants will be inspired to develop their abilities as dynamic leaders.

MDCR 276 Building High Performance Teams
Term Prerequisite: None
Semester Prerequisite: None
Dynamic leaders develop dynamic teams. They need followers, but followers who can function independently and cooperatively in the organizational endeavor. This course instructs participants in practical strategies for creating dynamic teams.

MDCR 277 Facilitating Group Decision-Making
Term Prerequisite: None
Semester Prerequisite: None
In order for groups to work together, leaders must be skilled in people and task functions. They must be able to lead a group through a process of decision-making while maintaining positive relationships and high quality decisions. This seminar will train participants in the skills of leading and the processes of decision-making.

MDCR 278 Developing Strategic Plans
Term Prerequisite: None
Semester Prerequisite: None
Effective strategic planning is essential for long-term success in the work market. It focuses on doing the right thing, on being effective. This seminar teaches a team approach to strategic planning.

MDCR 279 Communicating Thoughts Orally
Term Prerequisite: None
Semester Prerequisite: None
Collecting one's thought and speaking extemporaneously to present one's reaction, viewpoint, or pertinent information is a vital ability for leaders. This workshop will instruct participants in the strategies for gathering one's thoughts and presenting them clearly and logically.

MDCR 280 Strengthening Interpersonal Relationships
Term Prerequisite: None
Semester Prerequisite: None
Good interpersonal skills are essential for productive working relationships and for maintaining an efficient working environment. This seminar provides training to managers on techniques for strengthening interpersonal skills for improved working relationships.

MDCR 281 Dealing With Difficult People
Term Prerequisite: None
Semester Prerequisite: None
Difficult people create problems! In this practical seminar participants will observe and practice effective strategies for handling difficult people. Participants will be able to reduce the problems difficult people create.

MDCR 282 Analyzing and Solving Performance Problems
Term Prerequisite: None
Semester Prerequisite: None
A primary element for solving performance problems is creating and sustaining a supportive work environment. This seminar provides training to supervisors and managers that will help identify and solve work problems and encourage peak employee activity.

POLS 280 Politics and Government of Japan
Term Prerequisite: None
Semester Prerequisite: None
An introduction to the Japanese governmental structures and political process, with emphasis on the unique characteristics of Japanese political culture, Japanese style of decision-making, and Japanese concepts of democracy.

OSEN 005 Quality Assurance Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.
QSEM 110 Quality Assurance Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 115 Quality Assurance Seminar
1.5
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 120 Quality Assurance Seminar
2
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 125 Quality Assurance Seminar
2.5
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 130 Quality Assurance Seminar
3
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 140 Quality Assurance Seminar
4
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 145 Quality Assurance Seminar
4.5
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

QSEM 150 Quality Assurance Seminar
5
Term Prerequisite: None
Semester Prerequisite: None
Seminar content is dependent upon course requirement.

RSEM 005 Resource and Operations Management Systems Seminar
.5
Term Prerequisite: None
Semester Prerequisite: None
Course content varies with the seminar.

RSEM 110 Resource and Operations Management Systems Seminar
1
Term Prerequisite: None
Semester Prerequisite: None
Course content varies with the seminar.

RSEM 115 Resource and Operations Management Systems Seminar
1.5
Term Prerequisite: None
Semester Prerequisite: None
Course content varies with the seminar.

RSEM 120 Resource and Operations Management Systems Seminar
2
Term Prerequisite: None
Semester Prerequisite: None
Course content varies with the seminar.

RSEM 125 Resource and Operations Management Systems Seminar
2.5
Term Prerequisite: None
Semester Prerequisite: None
Course content varies with the seminar.

RSEM 130 Resource and Operations Management Systems Seminar
3
Term Prerequisite: None
Semester Prerequisite: None
Course content varies with the seminar.

SOCL 280 Introduction to Japanese Culture
3
Term Prerequisite: None
Semester Prerequisite: None
An introduction to contemporary Japan in its cultural context. Emphasis is on the unique features of the Japanese way of life in terms of Japanese values, social system, and cultural background.

SPAN 189 Seminar: Spanish for Hermandad
3
Term Prerequisite: SPN 195/196/Successful Score on Spanish Assessment Test
Semester Prerequisite: SPAN 116/Successful Score on Spanish Placement Test
Designed for persons who have knowledge of Spanish and wish to develop conversational as well as reading skills in the language. Students learn practical vocabulary and essential grammar for expressing themselves in Spanish. They become familiar with different aspects of the Hispanic culture through readings, informal lectures, and audio-visual presentations.

USMT 100 U.S. Military Rigging
2
Term Prerequisite: None
Semester Prerequisite: None
Covers uses and strengths of ropes, chains, block, and tackles, and the construction and erection of gin poles, with study of rope knots used in rigging. Also, safe working strength of slings, hooks, sheaves, ropes, and chains, and the use of personal safety equipment will be covered.

USMT 101 U.S. Military Machine Tool Survey I
.5
Term Prerequisite: USM 101
Semester Prerequisite: USM 101
Covers machine and hand tools used by an industrial machinist. Lab offers a variety of hands-on experiences.

USMT 102 U.S. Military Machine Tool Survey II
.5
Term Prerequisite: USM 101
Semester Prerequisite: USM 101
Covers advanced procedures begun in USMT 101. Emphasis on a variety of functions done on a lathe.

USMT 103 U.S. Military Machine Tool Survey III
.5
Term Prerequisite: USM 102
Semester Prerequisite: USM 102
Covers the tools and methods used to cut threads on a machine lathe.

USMT 104 U.S. Military Machine Tool Survey IV
.5
Term Prerequisite: USM 103
Semester Prerequisite: USM 103
Covers the tools and methods used to set up and machine a horizontal and vertical mill and a surface grinder.

USMT 106 U.S. Military Hydraulics I
.5
Term Prerequisite: None
Semester Prerequisite: None
Introduces theory of fluid power and basic circuits, using cylinders, valves, accumulators, filters, pumps, motors, etc., as they are used in current industrial applications. Hands-on experience will be given using cutaways, standard components, and test stands.

USMT 107 U.S. Military Hydraulics II
5
Term Prerequisite: USM 106
Semester Prerequisite: USMT 106
Continuation of USMT 106. Advanced techniques in the use of hydraulics and pneumatics with emphasis on valves and cylinders.

USMT 108 U.S. Military Hydraulics III
.5
Term Prerequisite: USM 107
Semester Prerequisite: USM 107
Introduces the theory of practical application of fluid power, air power, and vacuum involving training benches and component parts. A broad overview covering principles, components, and basic circuitry, troubleshooting, and where this power is used in modern industry.

USMT 130 AC/DC Circuits
1
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers theory of operation and use of electronic communications equipment, common electronic test instruments, radio communication system diagnostic practices, general electrical safety, technical administration report completion, repair parts logistics support, and on-the-job training (OJT) development.

USMT 131 Navy Electronics I
.5
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers the fundamental concepts of electricity to electronic amplification using transistors. Emphasis is on laboratory work.

USMT 132 Navy Electronics II
.5
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers the fundamentals of electricity to electronic amplification using transistors. Emphasis is on laboratory work.
USMT 133 Electrical Circuits I .5
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers basic electrical safety practices in an industrial setting and introduces the student to electricity on a practical level.

USMT 134 Electrical Circuits II .5
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers the fundamental concepts of electricity to electronic amplification using transistors. Emphasis is on laboratory work.

USMT 135 Electrical Circuits III .5
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers advanced concepts of electricity to electronic amplification using transistors. Emphasis is on laboratory work.

USMT 136 Transistors .5
Term Prerequisite: U.S. Military
Semester Prerequisite: U.S. Military
Covers advanced concepts of electricity to electronic amplification using transistors. Emphasis is on laboratory hands-on work using oscilloscopes, ohmmeters, and voltmeters.

USMT 150 U.S. Military Welding I .5
Term Prerequisite: None
Semester Prerequisite: None
Introduces and uses basic principles, safe operation, and application of oxy-acetylene welding and cutting. Each process consists of beading, butt, lap, and corner joints in the flat and horizontal positions.

USMT 151 U.S. Military Welding II .5
Term Prerequisite: None
Semester Prerequisite: None
Introduces basic principles, safe operation, and application of the electric arc processes. The process consists of beading, butt, lap, and corner joints in the flat and horizontal positions.

USMT 152 U.S. Military TIG Welding .5
Term Prerequisite: USM 151
Semester Prerequisite: USMT 151
Study of the principles and fundamentals of Tungsten Inert Gas (TIG) welding in different positions on steel and aluminum.

USMT 153 U.S. Military Welding Inspection .25
Term Prerequisite: None
Semester Prerequisite: None
This course will give the student a basic understanding of how to repair existing parts to make new parts and to replace worn or damaged parts.

USMT 154 U.S. Military Structural Fabrication .25
Term Prerequisite: None
Semester Prerequisite: None
This course provides the fundamental principles of weld testing and inspection. Proper procedures of destructive and nondestructive testing of welds along with a knowledge of codes, standards, and procedures will be stressed.

USMT 160 U.S. Military Air Conditioning I .5
Term Prerequisite: None
Semester Prerequisite: None
Fundamentals and principles of air conditioning systems, repair, maintenance, and servicing residential units.

USMT 161 U.S. Military Air Conditioning II .5
Term Prerequisite: USM 160
Semester Prerequisite: USMT 160
An introduction to the mechanical refrigeration cycle as it applies to residential and light commercial refrigeration and air conditioning equipment. The refrigeration system operation as well as the function of its individual components, such as compressor, evaporator, condenser, and metering device are covered in detail.

USMT 162 U.S. Military Air Conditioning III .5
Term Prerequisite: USM 161
Semester Prerequisite: USMT 161
Covers the complete set-up and testing of the variety of components used in residential and light commercial air conditioning. A major emphasis will be placed on “fine tuning” and troubleshooting on an air conditioning system.

USMT 163 U.S. Military Air Conditioning IV .5
Term Prerequisite: USM 164
Semester Prerequisite: USMT 164
The fundamentals of air conditioning servicing: the testing, repairing, and troubleshooting of a variety of residential and commercial systems.

USMT 164 U.S. Military Electrical .5
Term Prerequisite: None
Semester Prerequisite: None
The student will learn to use meters to measure electrical quantities, do basic circuit calculations, read household and commercial wiring drawings, review national electrical codes and standards, and will practice the installation of non-metallic sheathed cable, flexible metal clad cable, electrical metallic tubing, and rigid conduit.

USMT 165 U.S. Military Fundamentals of Refrigeration .5
Term Prerequisite: None
Semester Prerequisite: None
The refrigeration system operations as well as the function of its individual components, such as compressor, evaporator, condenser, and metering device are covered in detail. Symbols, wiring diagrams, circuits, meters, and motors are discussed and worked on.

USMT 166 U.S. Military Refrigeration .5
Term Prerequisite: None
Semester Prerequisite: None
The fundamentals of light commercial and commercial refrigeration units are covered. Component identification and operation as well as a thorough working knowledge of the sequence of operations of commercial units such as reach-ins, walk-ins, display cases, and ice makers are demonstrated.

USMT 169 U.S. Military Sewage Disposal and Field Sanitation .5
Term Prerequisite: None
Semester Prerequisite: None
Introductory course in sewage disposal and field sanitation. Will cover the installation, operation, and maintenance of various water and sewage treatment equipment.

USMT 200 U.S. Military Pump Repair I .5
Term Prerequisite: None
Semester Prerequisite: None
Fundamentals of operating principles of pumps and pump controls, applications of pump equipment in industry, along with installation, alignment, operation, and maintenance procedures.

USMT 201 U.S. Military Pump Repair II .5
Term Prerequisite: USM 200
Semester Prerequisite: USMT 201
Course covers the safe practices, troubleshooting, dismantling, and rebuilding of equipment. Special emphasis is placed on bearings, valves, and couplings.

USMT 202 U.S. Military Pump Repair III .5
Term Prerequisite: USM 201
Semester Prerequisite: USMT 201
This course will cover valves, steam traps, pipe fittings, and pipings as they are used inside of pumps.

USMT 203 U.S. Military Canvas Repair .5
Term Prerequisite: None
Semester Prerequisite: None
This course covers the specific uses and special care and handling of canvas and canvas equipment.

USMT 211 Military Concrete Layout .5
Term Prerequisite: U. S. Military
Semester Prerequisite: U. S. Military
In this course the students will learn layout and forming for concrete pours.

USMT 212 Military Concrete Finishing .5
Term Prerequisite: U. S. Military
Semester Prerequisite: U. S. Military
This course will teach the student to: mix, place, and finish concrete; maintain tools and equipment; operate concrete machines, perform operator’s maintenance on concrete machines, and proper proportion of materials for standard mix concrete.

USMT 213 Military Masonry Helper .5
Term Prerequisite: U. S. Military
Semester Prerequisite: U. S. Military
In this course the students will learn to perform as a mason’s helper, lay concrete masonry units, and lay out various masonry bonds.
USMT 214 Military Framing
Term Prerequisite: U. S. Military
Semester Prerequisite: U. S. Military
In this course students will learn to lay out, cut, assemble, and erect wood frame structures and all types of rafters.

USMT 260 U.S. Military Sheet Metal
Term Prerequisite: None
Semester Prerequisite: None
Covered will be sheet metal layout, identification of sheet metal fittings, various types of venting, fiberglass and insulated duct, and general furnace installation procedures.

USMT 262 U.S. Military Plumbing
Term Prerequisite: None
Semester Prerequisite: None
Fundamentals and principles of plumbing systems, fixtures, and appliances including installation, maintenance, and servicing.

WELD 181 Welding Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar may cover a variety of topics including maintenance welding, production welding, resistance welding, and/or tool and die welding, etc. For people interested in the welding field or who need welding skills as part of their job duties.

WELD 182 Welding Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar may cover a variety of topics including maintenance welding, production welding, resistance welding, and/or tool and die welding, etc. For people interested in the welding field or who need welding skills as part of their job duties.

WELD 183 Welding Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar may cover a variety of topics including maintenance welding, production welding, resistance welding, and/or tool and die welding, etc. For people interested in the welding field or who need welding skills as part of their job duties.

WELD 184 Welding Seminar
Term Prerequisite: None
Semester Prerequisite: None
Seminar may cover a variety of topics including maintenance welding, production welding, resistance welding, and/or tool and die welding, etc. For people interested in the welding field or who need welding skills as part of their job duties.
FACULTY AND STAFF DIRECTORY

Due to reorganization, the titles listed in the Faculty and Staff Directory may not be the most current available. Please contact the department for more information. See the Directory of Departments at the front of the General Information section for appropriate telephone numbers.

ABDO, Saide
Public Safety Supervisor, Lt., Public Safety
A.G., Lansing Community College

ALFARO, Rogelio R.
Associate Professor-Counselor, Student Development Services
B.A., Michigan State University; M.A., Michigan State University

ALLEN, Richard L.
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A.B., Lansing Community College; B.A., Cleary College

AZIMA, Alex M.
Associate Professor, Science
B.S., Massachusetts Institute of Technology; M.S., Michigan State University

BALDWIN, Robert L.
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B.A., Michigan State University

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B.S., University of Wisconsin; M.A., University of New Mexico

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B.A., University of Rhode Island; M.A., University of Rhode Island; Graduate Study, Michigan State University

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B.A. University of New Hampshire

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B.A., Michigan State University; M.S.W., Michigan State University

BENDER, Kathleen
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A.G., Lansing Community College

BENNETT, Catherine
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B.S., University of Wisconsin; M.S., University of Wisconsin

BENTLEY, Robert H.
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B.A., Pacific University; M.A., Pacific University; Graduate Study, University of Nevada

BERGERON, Jack
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B.F.A., Michigan State University; M.A., Central Michigan University

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B.S., Central Michigan University; M.A., Central Michigan University; Ph.D., Michigan State University

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B.T., Punjab University; M.Ed., Punjab University; M.A., Punjab University; Ed.D., Utah State University

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A.S., Lansing Community College; B.S., Michigan State University; M.S., Michigan State University; Ed.D., Michigan State University

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A.B., Drury College; M.A., University of Notre Dame; Ph.D., University of Notre Dame

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B.A., Central Michigan University; M.A., Central Michigan University

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B.S., Central Michigan University; M.S., Central Michigan University

BURKE, Ilse H.
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B.A., Kalamazoo College; M.A., Michigan State University; Ph.D., Michigan State University

BURKE, Theodore
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A.A., Alpena Community College; B.A., Michigan State University

BUTTERMAN, Geraldene
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A.B., Calvin College; M.A., University of Michigan

BYRNE, Deborah D.
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B.M., Michigan State University; M.M., Michigan State University

CANDALY, Hortense G.
Director, LCC Foundation
B.A., Fisk University; M.A., Michigan State University

CANSFIELD, John H.
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B.A., Michigan State University; M.A., Michigan State University; Ed.D., Western Michigan University

CARADINE, Bruce W.
Manager-Operations/Energy, (Evening College), Physical Plant
B.S. Central Michigan University; M.A. Central Michigan University

CARLISLE, Harold R.
Transportation Training Specialist, Automotive

CARLSON, Stephen C.
Associate Professor, Science
B.A., Western Michigan University; Ph.D., Purdue University

CAROL, Mary M.
Assistant Professor, Dance Program, Performing Arts
B.F.A., University of Montana; M.A., Columbia University

CARPENTER, Dorothy L.
Professor, Health Careers
R.N., E. W. Sparrow Hospital School of Nursing

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Program Director, Sign Language/Interpreter Training, Communication
B.S., Ball State University; M.S., Indiana University

CHIARAVALLI, Trudy K.
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B.A., University of Michigan; M.B.A., Michigan State University

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B.A., Colgate University; M.A., Michigan State University; Ph.D., Michigan State University

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B.S., Aquinas College; M.S., Michigan State University

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B.A./B.S., University of Illinois; M.A., Michigan State University

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A.A.S., Lansing Community College

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B.S., Michigan State University
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Associate Professor, Management, Marketing and Economics  
B.A., Michigan State University; M.A., Michigan State University

DARR, William R.  
Special Assignment  
B.S., Michigan State University; M.A., Michigan State University

DAVIDSON, David J.  
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B.S., University of Dayton, M.A., Michigan State University

DECK, Sally Ann  
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B.S., University of Michigan; M.S., University of Michigan

DECKINGA, Glenn A.  
Systems Analyst II, Information Systems and Computer Services  
A.B., Lansing Community College

DENARDO, William F.  
Director, Manufacturing Technology  
B.S., University of Minnesota; M.A., Western Michigan University

DONOHUE, Pamela  
Professor, Dental Hygiene, Health Careers  
A.A., Ferris State College; B.S., Ferris State College

DOUGLAS, Phillip J.  
Professor, Mathematics and Computer Science  
B.S., Michigan State University; M.A.T., Michigan State University; M.S., Michigan State University

DOVE, Ronald E.  
Director, Personnel  
B.A., Michigan State University

DOWNEY-GREER, JoEllen  
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B.A., Michigan State University; M.A., Michigan State University

DUCAI, John C.  
Professor, Social Science  
B.A., Michigan State University; M.A., Michigan State University; Ph.D., Michigan State University

EDMUNDS, Peter A.  
Professor, Humanities  
B.A., University of Richmond; M.A., University of Richmond; Diploma for Advanced Graduate Study, Michigan State University

EGGLESTON, William  
Professor, Manufacturing Technology  
A.A.S., Ferris State College; B.S., Ferris State College; M.A., Michigan State University

ELSEA, William R.  
Manager, Data Base and Application Programming Group, Information Systems and Computer Services  
Certificate, Lansing Community College; Certificate, Data Processing, Michigan State University

ENGSTROM, Paul W.  
Assistant to Director, Physical Plant  
B.A., Michigan State University; M.B.A., Michigan State University

EURE-HARRIS, Currilda  
Instructor-Counselor, Student Development Services  
B.A., Temple University; M.A., Michigan State University

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The following School Districts constitute the LCC Resident District
VISITORS TO LANSING COMMUNITY COLLEGE
The LCC Visitor Parking Area is located in the AutoCenter Courtyard in the 400 block of North Grand Avenue.

ENTERING THE LOT
1. Traveling north on Grand Avenue, the AutoCenter Courtyard is located just past the intersection of Grand Avenue and Shiawassee Street.
2. Visitor parking is located along the south wall of the Courtyard (on your left as you drive in). All visitor spaces are posted with signs.
3. Attach your visitor parking permit (using the sticky tape) to the left rear window (not the side window) so the permit is visible from the rear of the car.
4. Throw away your visitor parking permit (after the expiration date) when use is completed.
CAMPUS FACILITIES MAP

* Emergency Phone
* Handicapper Entrances
* Handicapper Entrances with Electronic Doors (Push-button electronic door at 2nd floor entrance of GPE from Parking Ramp)
* Handicapper Parking (Parking on 2nd floor of Parking Ramp and other marked spaces)

Building Key
1B. Office Unit B (OUB)
1C. Office Unit C (OUC)
1F. Office Unit F (OUF)
1. Old Central (OC)
2. Photography Center (PC)
3. Administration (ADM)
4. North House (NH)
Hermann Conference Center Complex
5A. Hermann Conference Center
5B. Rogers-Carrier House
5C. LCC Board Room
6. Dart Auditorium (DRT)
7. Turner House (TH)
8. Student Personnel Services (SPS)
9. Arts & Sciences (A&S)
10. Parking Ramp (Quick Card and Cash)
11. Gannon Health Careers' Physical Education (GPE)
12. Gannon Vocational/Technical (GVT)
13. Voc-Tech Automotive Center
14. Academic & Office Facility (AOF)
15. Parking Lot (Quick Card Only)
16. Parking Lot (Quick Card Only)
17. Community Services and Continuing Education
CAMPUS MAP

Building Key

1B. Office Unit B (OUB)
1C. Office Unit C (OUC)
1F. Office Unit F (OUF)
   1. Old Central (OC)
   2. Photography Center (PC)
   3. Administration (ADM)
   4. North House (NH)
   5. Herrmann Conference Center Complex

5A. Herrmann Conference Center
5B. Rogers-Carrier House
5C. LCC Board Room
   6. Dart Auditorium (DRT)
   7. Turner House (TH)
   8. Student Personnel Services (SPS)
   9. Arts & Sciences (A&S)
  10. Parking Ramp (Quick Card and Cash)
11. Gannon Health Careers/
    Physical Education (GPE)
12. Gannon Vocational/Technical (GVT)
13. Voc-Tech Automotive Center
14. Academic & Office Facility (AOF)
15. Parking Lot (Quick Card Only)
16. Parking Lot (Quick Card Only)
17. Community Services and Continuing Education
LEARNING CENTER LOCATIONS
EXTENSION AND COMMUNITY EDUCATION

Learning Center Locations

- Bath
- Bath High School
- Byron
- Byron High School
- Charlotte
- Charlotte High School
- Corunna
- Shiawassee Intermediate School District
- Dansville
- Dansville High School
- DeWitt
- DeWitt High School
- Fuerstenau Elementary School
- East Lansing
- Bailey Community Center
- East Lansing High School
- Eaton Rapids
- King Street School
- Fowlerville
- Fowlerville High School
- Fowlerville Middle School
- Grand Ledge
- Grand Ledge High School
- Haslett
- Haslett High School
- Holt
- Holt High School
- Holt Junior High School
- Hope Middle
- Howell
- Challenger Elementary School
- Howell High School
- Laingsburg
- Laingsburg High School
- Lansing
- Catholic Central High School
- Cristo Rey Community Center
- Lansing Mall
- Leslie
- Leslie High School
- Mason
- Capital Area Career Center
- Mason High School
- Okemos
- Okemos Community Education Center
- Okemos High School
- Wardcliffe Elementary
- Owosso
- Lincoln School
- Owosso High School
- Perry
- Perry High School
- Portland
- Portland High School
- St. Johns
- St. Johns High School
- Stockbridge
- Stockbridge Middle School
- Waverly
- Waverly High School
- Waverly Middle School
- Webberville
- Webberville High School
- Williamston
- Williamston Community Center
- Williamston Elementary School

- LCC classes are held at local schools in partnership with Community Education Offices in these locations.