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1987-1988

Planning Guide



montcalm community college

...helping you prepare for life

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ADMISSION TO MONTCALM COMMUNITY COLLEGE

Applicants shall possess a high school diploma or, if over the age of 18 years, shall submit to an educational equivalency examination as prescribed by the Dean of Student Services.

Exceptions to the above, in keeping with the "Open-Door Policy" of Montcalm Community College, may be made at the discretion of the Dean of Student Services.

HOW TO APPLY FOR ADMISSION

1. Applications are available from high school counselors or MCC's Admissions Office.
2. The application and the non-refundable application fee should be sent to MCC's Admissions Office.
3. Students should have an official copy of their high school transcript or equivalency examination sent to MCC.
4. Questions should be referred to the student's high school counselor or the Admissions Office at MCC.

GUEST APPLICATION

A guest applicant is a student who is currently enrolled in a program at another college or university, and who wishes to complete a course at MCC as part of that program. Guest applicants may complete the regular application procedure, or complete a Guest Application Form, and receive permission to attend MCC. Guest Application Forms are usually available at the Records Office of the student's home college or university. A student may not attend as a guest for two consecutive semesters.

FORMER STUDENTS

MCC extends to all students a continuous matriculation; therefore, former students need only to contact the Admissions Office to update the personal information file and reactivate their registration status. The only exception to this regulation applies to students who have been formally dismissed. They must re-apply through the Dean of Student Services Office. Former students need not complete an admission form.

POLICY AGAINST DISCRIMINATION

It is the policy of MCC that no person shall--on the basis of sex, race, religion, color, national origin, age, or handicap--be excluded from participation in, be denied the benefits of, or be subjected to discrimination in any of its programs or activities.

Mr. James Lantz is the college EEO Officer/Title IX - Section 504 coordinator. His office is located in the Library/Administration Building - telephone 517-328-2111, extension 284.

TUITION AND FEES

RESIDENTS OF MONTCALM COMMUNITY COLLEGE DISTRICT

Tuition	\$25.00 per credit hour
Fees \$1 per credit hour to a maximum of	\$12.00 per semester

(Resident of MCC district - lives within one of the public school districts of Carson City, Central Montcalm, Greenville, Lakeview, Montabella, Tri-County, and Vestaburg.)

MICHIGAN NON-DISTRICT RESIDENTS

Tuition	\$37.50 per credit hour
Fees \$1 per credit hour to a maximum of	\$12.00 per semester

OUT-OF-STATE RESIDENTS

Tuition	\$41.00 per credit hour
Fees \$1 per credit hour to a maximum of	\$12.00 per semester

OTHER FEES

Application for Admission (paid only once)	\$5
Late Registration Fee	\$5
Laboratory Fee	\$5 (per contact hour)*

*A course with a required laboratory will cost an additional \$5 per student contact hour over and above the assessed credit hour charged for the course. For example: NUR115, 3 credits with 9 laboratory hours, the student will be charged for 3 credit hours and 6 additional contact hours. In-district student-3 credit hours x \$25 + 6 additional contact hours x \$5 = \$105.

PAYMENT OF TUITION AND FEES

1. Tuition and fees are due and payable in full on the day of registration.
2. Students unable to pay the cost of tuition and fees should consult with the Financial Aid Office prior to registration to determine possible eligibility for Federal Grants. For students with good credit, payment terms can be arranged with the Business Office prior to registration. Full-payment terms can be arranged prior to registration with the Business Office for those with good credit. Full payment must be received prior to the end of the semester.
3. Visa or Master Charge are accepted.
4. No other credit arrangements can be made through the college.

FINANCIAL AID INFORMATION

Montcalm Community College strives to make a college education possible for all qualified students. Financial aid is available in a variety of forms: scholarships, loans, grants, and work-study jobs that supplement the cost of your college education.

HOW TO APPLY FOR AID

To be considered for financial aid, students must file a Financial Aid Form (FAF). It will then be processed by the College Scholarship Service. Timing of the application is important. Students may apply for aid after January 1, and after the student or his/her parents have completed their income tax return for the past calendar year.

By completing the FAF, students will be considered for several types of financial aid. However, students may apply only for a Pell Grant by submitting just a Pell Grant application.

The Pell Grant application and the Financial Aid Form are available at your high school guidance office and the Financial Aid Office at the College.

MCC SCHOLARSHIPS

Montcalm Community College offers several scholarships each year to area high school students. Specific details about the following scholarships may be obtained from the high school counselor or MCC Financial Aid Office.

1. Board of Trustees (in-district) - two scholarships per area high school are available. These are given to students who have attained a "B" average in high school. Recipients could receive up to full tuition and fees.
2. Board of Trustees (out-district) - seven scholarships are available. These are given to students who have attained a "B" average in high school. Recipients could receive up to full tuition and fees.
3. Area High School Grants - two grants per area high school are available. Students who are recommended must apply for a Pell Grant. If ineligible for Pell, recipients could receive up to full tuition and fees from MCC.
4. Performing Arts/Music Stipend - fifteen stipends are available to students who perform in choir and band. Recipients could receive up to full tuition and fees.
5. Adult High School Completion - two scholarships are available to each high school completion program. Scholarships will cover 7 credit hours of tuition and fees (in-district rate).
6. Outstanding Achievement Awards - five awards will be available to students who have excelled in a specific area in high school. Recipients could receive up to full tuition and fees.

7. MCC Adult Scholarships - five scholarships will be available to new students over the age of 21. Amount will be \$200 per semester.
8. Scholarships for High School Seniors - scholarships for three (3) MCC classes, tuition and fee free (limited to the in-district rate), may be available to students who have completed their junior year of high school with at least a B+ average. These courses must be taken during their senior year.
9. Scholarships for Adult High School Seniors - scholarships for three (3) MCC classes, tuition and fee free (limited to the in-district rate), may be available to students who have achieved senior status, have at least a B+ average, and are currently enrolled in the last quarter of their adult high school completion program. These courses must be taken during their senior year.
10. Over-60 Scholarships - tuition scholarships are available to persons age 60 or older.
11. MCC Foundation Scholarship (in-district) - one \$1000 scholarship will be available annually to students entering directly from high school with a grade point average of 3.00 (B) or better and who declare a major in mathematics and/or science.
12. James Crosby Memorial Scholarship - one \$1000 scholarship will be available annually to a sophomore student with a grade point average of 3.00 (B) or better and who has a letter of support from 4-H Leaders' Council.

There are also several local scholarships available each year. More information can be obtained from the Financial Aid Office.

STATE AID PROGRAMS

GUARANTEED STUDENT LOAN

Under this program, students may borrow up to \$2,500 per academic grade level. This loan bears an 8% interest rate. Applications for this loan are available at many local banks and credit unions.

STATE DIRECT STUDENT LOAN

Students unable to obtain a Guaranteed Student Loan from a private lender may be eligible for a State Direct Loan. Students may borrow up to \$2,500 per academic level. Students may obtain a Direct Loan application kit from the Financial Aid Office.

MICHIGAN COMPETITIVE SCHOLARSHIP

The State Scholarship program currently measures academic potential on the basis of the National ACT Exam. Eligible applicants may receive up to the amount of demonstrated need or the amount of tuition, whichever is less. Students must be Michigan residents. For more information, students may contact their high school counselor or the Financial Aid Office.

SINGLE PARENT/HOMEMAKER PROGRAM

The Single Parent/Homemaker Program was made possible through a grant provided by the Vocational Educational Department of the State of Michigan. This program is designed to assist students who are enrolled in a vocational program and who are single parent/homemakers or non-traditional job trainees.

Students applying must meet several eligibility criteria. Currently, MCC is able to provide tuition assistance to eligible students. Applications may be obtained from the Financial Aid Office.

MICHIGAN ADULT PART-TIME GRANT PROGRAM

The Michigan Adult Part-Time Grant Program is designed to provide grant assistance for needy adults who enroll at approved public or private degree-granting Michigan colleges on a part-time basis. Grants of up to \$600 per year are available for not more than two years of study.

MICHIGAN EDUCATIONAL OPPORTUNITY GRANT PROGRAM

The Michigan Educational Opportunity Grant Program is designed to provide grant assistance for needy undergraduates who are enrolled on at least a half-time basis at public, Michigan colleges and universities. Grants of up to \$1000 per year are available under this program.

MICHIGAN WORK-STUDY PROGRAM

The Michigan Work-Study Program is designed to provide work opportunities for needy, undergraduate students who enroll at approved public or private degree-granting, Michigan colleges on a full or part-time basis. Both non-profit and profit-based employers may sign agreements with Michigan colleges to participate in this program.

MICHIGAN AUXILIARY LOAN (PLUS) PROGRAM

Parents may borrow for their dependent children and independent undergraduate and graduate students may borrow for themselves for study at eligible schools. Requests for application forms may be made through participating Michigan lenders (banks, savings and loan associations, and credit unions).

FEDERAL AID PROGRAMS

PELL GRANT

Formerly known as the BEOG (Basic Educational Opportunity Grant Program), the Pell Grant is available on the basis of demonstrated financial need. It is for undergraduate students who are attending eligible vocational schools or colleges on at least a half-time basis. These grants are based on the cost of attendance at the institution and do not exceed 50% of the cost of education. To be considered, students may file a Pell Grant application or a Financial Aid Form (FAF).

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT

These are limited funds available to students who demonstrate financial need. These grants can be up to \$2,000 per academic year. To be considered for this grant, students must file a Financial Aid Form (FAF).

NATIONAL DIRECT STUDENT LOAN

Known as the NDSL, these loans are available to students who demonstrate financial need. These loans bear a 5% interest rate and allow the student a six month grace period before repayment begins. Students can borrow up to \$3,000 for two years of undergraduate work. To be considered, students must file a Financial Aid Form (FAF).

COLLEGE WORK-STUDY PROGRAM

This financial aid is in the form of a part-time job on the college campus. It is available to students enrolled at least half-time and who demonstrate financial need. Preference is given to students who have the greatest financial need. Students can work up to 20 hours per week. To be considered, students must file a Financial Aid Form (FAF).

MONTCALM COMMUNITY COLLEGE
CREDIT ACCEPTANCE GUIDELINES

Students enrolled at Montcalm Community College for the first time either as first semester freshmen or as first or second year transfer students may wish to have work experience or coursework taken at other institutions evaluated for MCC credit. While not all experiences nor even all coursework will be automatically accepted, in many instances it can be used to satisfy MCC course requirements or be applied toward completion of the associate degree or certificate as elective credit.

In general, a maximum of 36 credit hours may be either transferred into Montcalm Community College or earned in some other fashion than in the traditional way. In order to receive an Associate Degree, a student must earn a minimum of 24 credit hours at Montcalm Community College. In the case of certificate programs a minimum of fifty percent (50%) of the credits required for the certificate must be earned at MCC.

Moreover, students who intend to graduate from Montcalm Community College must be enrolled at the College during their final semester prior to receiving a degree or certificate.

Described below are guidelines for the acceptance of credit from other colleges or universities and for earning credit in non-traditional ways. In order for a student to qualify, he/she must make formal application to the College and be an enrolled student. More detailed information is available from the Admissions Office (or from the appropriate instructional administrator).

1. Transfer Credit from Accredited Institutions of Higher Learning

In general, courses taken at other colleges or universities in which a student has earned a "C" grade or better may be transferred to Montcalm Community College.

For more information on transfer credit please see the Student Handbook, pp. 15-16

2. Credit for Correspondence Courses

Generally credit will not be granted by MCC for correspondence coursework. Exceptions are limited to United States Armed Forces Instruction courses and courses for regionally accredited institutions of higher learning.

Procedure: In order to qualify for correspondence credit a student must forward official transcripts to the Records Office. The transcripts will be evaluated by the appropriate instructional administrator. A fee of \$5.00 will be charged for each credit granted.

3. Credit or Waiver by Examination

MCC recognizes that many of its students come to college with a wealth of practical experience. Often that experience is equivalent to knowledge that would be gained through MCC coursework. To take a course in that field may be needless repetition.

If a student wishes to receive a waiver or credit for a course in which he/she feels competent and for which an exam is offered he/she may opt for "credit or waiver by examination".

- a. for credit: after enrolling in the course and successfully completing the exam the student will be awarded full credit for the course. An "S" grade will be awarded.
- b. for waiver: upon successful completion of the exam, the requirement for taking that course will be waived. An examination fee of \$5.00 per credit hour will be charged.

This option is available for a specific course only once and is not available for a course in which a student has already received a grade.

Procedure: The list of courses that qualify for "credit by examination" is available in the Student Services Office. A student, upon finding a course on that list, may petition the appropriate administrator to take the examination prepared for it.

4. C.L.E.P. (College Level Examination Program) Credit

^{enrolled at MCC}
~~MCC Students in their first semester~~ who have taken part in the College Level Examination Program (CLEP) and who have ranked in the 50th percentile or higher on a Subject Area test may request a waiver of specific course requirements or have course credit granted. If the waiver is applied, the student will not have to take the corresponding MCC course but will be required to take the equivalent credit hours in other MCC course work. For those students who wish to have specific course credits granted for the CLEP exams a fee equivalent to \$5.00 per credit hour will be charged for each credit granted. A maximum of 14 credits may be earned in this fashion.

Procedure: To qualify for CLEP credit a student must supply to the Records Office an official transcript of the test results. The appropriate instructional administrator will then evaluate the examination results for credit. CLEP credit will be noted on the transcript.

5. Articulation Credits

MCC recognizes that some coursework completed in high school may be equivalent to basic courses offered at the college. Written agreements to grant college credit for high school courses have been reached with several school districts in respect to specific programs.

The conditions for receiving such credit are that the student:

1. has maintained a "B" average in high school course(s) under consideration; and
2. has received a written recommendation from the appropriate high school instructor.

Credit will be granted when the student has completed six (6) hours of MCC coursework with a "C" average in the discipline for which college credit is being granted. There will be no charge for the credit hours granted. To take advantage of this opportunity a student must enroll at MCC, take the appropriate courses no later than the beginning of the third year following high school graduation, and formally request credit. Finally, credit will be awarded through notation (no grade will be given) upon completion of the requirements. A maximum of nine (9) hours can be earned in this way.

Procedure: To qualify for articulation credits the student must submit the required forms to the Records Office. When the coursework at MCC has been completed, he/she must then notify the appropriate instructional administrator.

6. Credit for Training Program

A. Armed Services Training

1. Students who have successfully completed Military Basic Training will be granted up to four credit hours of Physical Education credit provided they:
 - a. formally request credit for Physical Education;
 - b. submit to the Recorder "Form DD214" indicating the successful completion of "Basic Training;" and

B. Other Training Programs

2. Students who have successfully completed military coursework may receive transfer credit upon application according to the appropriate ACE guide. The MOS number is, by itself, not recognized for transfer credit. A fee of \$5.00 will be charged for each credit granted.

Students who have successfully completed courses outlined in The National Guide (ACE) may receive transfer credit. A fee of \$5.00 will be charged for each credit granted.

Procedure: In order to earn credit for training or military coursework, a student must forward official transcripts to the Records Office. The transcripts will be evaluated for credit by the appropriate instructional administrator.

7. Credit for Life Experience (see #3)

DEGREE INFORMATION

ASSOCIATE DEGREE IN ARTS AND SCIENCES

	<u>COURSE TITLES</u>	<u>COURSE NUMBERS</u>	<u>CREDIT HOURS</u>
LA	Freshman English I	LA100	3
	Freshman English II*	LA101	3
HU	Humanities I	HU200	4
	Humanities II	HU201	4
NS	Biological Science**	NS100	4
	Physical Science**	NS101	4
SS	Intro to Social Science I	SS110	4
	Intro to Social Science II***	SS111	4
		TOTAL REQUIRED HOURS	30
		TOTAL ELECTIVE HOURS	30
		TOTAL FOR DEGREE	60

* OR (having earned B+ or better in LA100) any other language arts courses except speech or drama

** OR (with sufficient science background) any other TWO science laboratory courses

*** OR any other TWO social science courses

DEGREE INFORMATION

ASSOCIATE DEGREE IN APPLIED ARTS AND SCIENCES

	<u>COURSE TITLES</u>	<u>COURSE NUMBERS</u>	<u>CREDIT HOURS</u>
LA	Freshman English I	LA100	3
	Freshman English II*	LA101	3
SS	Intro to Social Science I	SS110	4
	Intro to Social Science II**	SS111	4 or 3
	LIBERAL ARTS REQUIRED HOURS		14 or 13
	PROGRAM REQUIREMENTS (See specific program description)		
	TOTAL FOR DEGREE		60+

* OR (having earned B+ or better in LA100) any language arts courses except speech or drama

** OR Biological Science or Physical Science NS100 or NS101
OR Humanities I or Humanities II HU200 or HU201
OR any other social science course

NOTE: Nursing students see page 26 for degree requirements

DEGREE INFORMATION

ASSOCIATE DEGREE IN GENERAL STUDIES

<u>COURSE TITLES</u>	<u>COURSE NUMBERS</u>	<u>CREDIT HOURS</u>
SS Intro to Social Science I	SS110	4
OR		
SS Political Science	SS240	3

Other academic courses (must include courses from at least three of the academic areas: humanities, language arts, mathematics, natural science, and social science).

TOTAL REQUIRED HOURS	15
TOTAL ELECTIVE HOURS	45
TOTAL FOR DEGREE	60+

MULTIPLE DEGREE PROCEDURE

A student may earn all three of MCC's degrees if he/she meets the requirements for those degrees. However, if a student has already received (or is receiving) an AAS or an AAAS degree, he/she may not apply for an Associate Degree in General Studies.

To receive an Applied Arts and Science degree a student must complete the degree requirements spelled out for that program. The completion of a certificate program coupled with general education courses is not sufficient to qualify for an AAAS degree.

Students may receive more than one AAAS degree if they fulfill the requirements specified by the department. However, a student may earn only one AAAS degree within a department (e.g. Business Studies, including Business Data Processing, and Office Education). Students may complete more than one area of concentration within a department. Each area of concentration will be noted on the degree. While a second degree will not be granted, an area of concentration completed after the AAAS degree is issued will be noted on the transcript.

GRADING SYSTEM

Academic achievement will be appraised and recorded by means of the following system of letter grades:

<u>GRADE</u>	<u>HONOR POINT VALUE</u>
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	.7
E Failure	
WP Withdrew while passing	
WF Withdrew while failing	
I Incomplete (see note below)	
V Audit (see note below)	
*S Satisfactory completion	
*U Unsatisfactory	

NOTE: Incomplete Grades - The "I" grade will be employed sparingly. It will be awarded in the case where a student has found it impossible to complete required coursework by the close of a semester for reasons beyond the student's control. It is an indication by the instructor of his belief that the student will receive a passing grade when the requirements have been fulfilled. Upon mutual written agreement (Incomplete Form) between student and instructor, the following procedure will be observed:

1. An "I" mark shall be entered on the record when a course of study is incomplete at the termination of the scheduled semester.
2. An "I" mark shall remain without alteration indefinitely or until such time as the requirements of the course are satisfied and warranted in writing by the instructor to the Recorder.
3. An "I" mark shall not be averaged with other grades to establish a grade point average (GPA).
4. Any student who receives veteran's benefits and receives an "I" in a course has one year to complete the "I".

NOTE: Audit - applies to the situation where a person pays tuition for a course but is not required to complete assignments or examinations. No credit is given for auditing a class.

*"S" (satisfactory completion) and "U" (unsatisfactory completion) grades will be used only for the following courses: SD150, SD151, SD152, SD153, SD156, SD160, SD161, SD162, SD163, SD170, SD175, NUR115, NUR116, NUR117, and those courses for which competency exams are submitted.

INFORMATION FOR TRANSFER STUDENTS

STATEWIDE COLLEGE AND UNIVERSITY ARTICULATION AGREEMENT

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Transfer Agreement was established to improve transfer student articulation between two-year and four-year colleges in Michigan. MCC is a participant in this agreement with the following Michigan four-year institutions:

Adrian College
Albion College
Alma College
Andrews University
Aquinas College
Central Michigan University
Cleary College
Detroit College of Business
Eastern Michigan University
Ferris State College
General Motors Institute
Grand Valley State College
Hope College
John Wesley College
Kalamazoo College
Lake Superior State College

Lawrence Institute of Technology
Madonna College
Marygrove College
Michigan State University
Michigan Technological University
Nazareth College
Northern Michigan University
Northwood Institute
Oakland University
Olivet College
Saginaw Valley State College
Shaw College
Siena Heights College
Spring Arbor College
Western Michigan University

This agreement provides that a student who completes the Associate Degree in Arts and Sciences at MCC and who is accepted as a transfer student by one of these schools will have satisfied the basic general education requirements of that four-year college. The specific requirements of the MACRAO agreement are:

1. English Composition	6 Semester Hours	or	9 Quarter Hours
2. Humanities	8 Semester Hours	or	12 Quarter Hours
3. Social Sciences	8 Semester Hours	or	12 Quarter Hours
4. Natural Sciences	8 Semester Hours	or	12 Quarter Hours

QUESTIONS: Which courses does MCC require? Which courses do four-year colleges recommend that a transfer student take at the community college level? Which electives are most useful in a given specialized field of study? Who has the answers to such questions?

ANSWERS: We have the answers! The following page contains information about several concentrations of study (majors) which one might pursue in the completion of a baccalaureate degree at a four-year college. SEE AN MCC COUNSELOR for more details about this IMPORTANT PLANNING! The information provided here will change as four-year institutions change their degree requirements. You SHOULD CONTACT the admissions office at the four-year college or university which you expect to attend (as soon as possible after beginning at Montcalm).

This information cannot be considered as an agreement or contract between the individual student and Montcalm Community College or its staff.

INFORMATION FOR CERTIFICATES AND APPLIED ARTS AND SCIENCES DEGREES

The certificate and degree programs listed on the following pages are designed for students who wish to complete a specialized training education before entering the job market. Students planning to transfer to a four-year (senior) college or university should consult with a counselor to determine whether it is best to select courses other than those listed herein, in order to maximize transferability of credits to upper level colleges and universities.

This document was prepared on December 1, 1986 and is subject to change without prior notice and therefore cannot be considered as an agreement or contract between the individual student and Montcalm Community College or its staff.

CERTIFICATE AND DEGREE GUIDELINES AND PROGRAMS

ARTS AND SCIENCES DEGREE GUIDELINES

Arts
Biological Sciences
Language Arts
Physical Education
Physical Sciences
Social Sciences

CERTIFICATE PROGRAMS

Apprentice Training
Automotive Servicing
Cosmetology
Criminal Justice
Drafting
Electrical Technology
Emergency Medical Technician
Food Service Technology
Machine Tool Operation
Nursing
Office Education
 Clerk-Typist
 Legal Office Assistant
 Medical Office Assistant
 Stenographer
 Word Processing
Small Business Development/Management
Welding

APPLIED ARTS AND SCIENCES DEGREE PROGRAMS

Automotive Technology
Business Data Processing
Business Studies
 Accounting
 Business Administration
 Small Business Development/Management
Criminal Justice
Drafting Technology
Food Service Technology
Industrial Technology
Nursing
Office Education
 Executive Secretary
 Legal Secretary
 Medical Secretary
 Word Processing
Radiological Technology (1+1 Agreement)

ART
ARTS AND SCIENCES
ASSOCIATE DEGREE PROGRAM

This is a two-year program in the liberal arts leading to an Associate Degree in Arts and Sciences with an emphasis in art. The objective of this program is to provide the background and skills necessary to continue study in the field of the visual arts.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intro to Social Science I	SS110	4
Intro to Art	HU120	2
Drawing I or Sketching	HU122	3
Painting I	HU125	3

SPRING SEMESTER

Freshman English II*	LA101	3
Intro to Social Science II*	SS111	4
Drawing II	HU123	3
Painting II	HU126	3
Elective		

SECOND YEAR

FALL SEMESTER

Humanities I	HU200	4
Biological Science	NS100	4
Ceramics I	HU130	3
Painting III	HU227	3
Art "Teaching Courses"		1-3
Elective		

SPRING SEMESTER

Humanities II	HU201	4
Physical Science	NS101	4
Ceramics II	HU131	3
Painting IV	HU228	4
Art "Teaching Courses"		1-3
Elective		

SUGGESTED ELECTIVES:

History
Philosophy
Literature

*See alternatives listed under requirements for the Associate Degree in Arts and Sciences (page 10)

**BIOLOGICAL SCIENCES
ARTS AND SCIENCES
ASSOCIATE DEGREE PROGRAM**

This is a two-year program in the liberal arts leading to an Associate Degree in Arts and Sciences with an emphasis in biology. The objective of this program is to provide the background and skills necessary to continue study in the field of biological science.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
College Chemistry I	NS220	4
Botany	NS110	4
Math Elective		3

SPRING SEMESTER

Freshman English II*	LA101	3
College Chemistry II	NS221	4
Zoology	NS115	4
Math Elective		3

SECOND YEAR

FALL SEMESTER

Humanities I	HU200	4
Intro to Social Science I	SS110	4
Anatomy and Physiology I	NS103	4
Science Elective		4

SPRING SEMESTER

Humanities II	HU201	4
Intro to Social Science II*	SS111	4
Anatomy and Physiology II	NS203	4
Science Elective		4

SCIENCE ELECTIVES

Microbiology	NS201
Intro to Physics I & II	NS230/231
Earth Science	NS102

MATH ELECTIVES

Intermediate Algebra	MA104
Trigonometry	MA102
College Algebra	MA159
Analytic Geometry	MA160

*See alternatives listed under requirements for the Associate Degree in Arts and Sciences (page 10).

**LANGUAGE ARTS
ARTS AND SCIENCES
ASSOCIATE DEGREE PROGRAM**

This is a two-year program in the liberal arts leading to an Associate Degree in Arts and Sciences with an emphasis in the language arts. The objective of this program is to provide the background and skills necessary to continue study in the field of language arts (literature, speech, communications).

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intro to Social Science I	SS110	4
American Thought & Lit I	LA200	3
Speech	LA210	3
Elective		3

SPRING SEMESTER

Freshman English II*	LA101	3
Intro to Social Science II*	SS111	4
American Thought & Lit II	LA201	3
Elective		3
Elective		3

SECOND YEAR

FALL SEMESTER

Humanities I	HU200	4
English Literature I	LA220	3
Biological Science	NS100	4
Elective		3

SPRING SEMESTER

Humanities II	HU201	4
English Literature II	LA221	3
Physical Science	NS101	4
Elective		3

LITERATURE ELECTIVES:

Short Story	LA230
Children's Literature	LA235
The Novel	LA240
Drama as Literature	LA260
Drama as a Performing Art	LA261
Poetry	LA270

OTHER ELECTIVES:

U.S. History to 1865	SS250
U.S. History since 1865	SS251
Michigan History	SS120
General Psychology	SS220
Economics	SS215
Intro to Philosophy	HU220

*See alternatives listed under requirements for the Associate Degree in Arts and Sciences (page 10).

PHYSICAL EDUCATION
ARTS AND SCIENCES
ASSOCIATE DEGREE PROGRAM

This is a program in liberal arts leading to an Associate Degree in Arts and Sciences with an emphasis in physical education. The objective of this program is to provide the background and skills necessary to continue study toward possible majors in secondary education with a minor in coaching; plus physical education and sport curriculum leading to employment in general recreation areas or therapeutic recreation; business; TV production; or health services management. A minimum of 60 credit hours is required to obtain a degree.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intro to Social Science I	SS110	4
Biological Science	NS100	4
Intermediate Algebra	MA104	3
Personalized Body Cond.	PE103	1
or Intro to Physical Fit	PE110	1

SPRING SEMESTER

Freshman English II*	LA101	3
Intro to Social Science II*	SS111	4
Speech	LA210	3
Sports Fundamentals I	PE105	1
Electives		

SECOND YEAR

FALL SEMESTER

College Chemistry	NS220	4
Anatomy & Physiology I	NS103	4
Humanities I	HU200	4
Sports Officiating	PE121	1
Beginning Swimming	PE130	1
Elective		

SPRING SEMESTER

General Psychology	SS220	3
Anatomy & Physiology II	NS203	4
Humanities II	HU201	4
Emergency Health Care	PE205	2
Elective		

It is a requirement that all students taking Physical Education courses submit evidence of physical fitness from their doctor to Montcalm Community College and this form will be placed in the student's file and kept on record for one year.

CMU's PED designated courses are subject to a limitation of six hours toward curriculum requirements for graduation.

SUGGESTED ELECTIVES

Introduction to Business	BA135
Principles of Marketing	BA233
Small Business Management	BA235
Management	BA237
Intro to Elec Data Process	DP110
Introduction to BASIC	DP112

*See alternatives listed under requirements for the Associate Degree in Arts and Sciences (page 10).

**PHYSICAL SCIENCES
ARTS AND SCIENCES
ASSOCIATE DEGREE PROGRAM**

This is a two-year program in the liberal arts leading to an Associate Degree in Arts and Sciences with an emphasis in the physical sciences. The objective of this program is to provide the background and skills necessary to continue study in the field of physical science (physics and chemistry).

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
College Chemistry I	NS220	4
Intro to College Physics I	NS111	4
College Algebra	MA159	3

SPRING SEMESTER

Freshman English II*	LA101	3
College Chemistry II	NS221	4
Intro to College Physics II	NS112	4
Analytic Geometry	MA160	3

SECOND YEAR

FALL SEMESTER

Humanities	HU200	4
Intro to Social Science I	SS110	4
Calculus I	MA250	4
Elective.		3-4

SPRING SEMESTER

Humanities II	HU201	4
Intro to Social Science II*	SS111	4
Calculus II	MA251	4
Elective		3-4

SCIENCE ELECTIVES:

Biological Science	NS100
Earth Science	NS102
Botany	NS110
Zoology	NS115
Nature Study	NS208

*See alternatives listed under requirements for the Associate Degree in Arts and Sciences (page 10).

SOCIAL SCIENCE
ARTS AND SCIENCES
ASSOCIATE DEGREE PROGRAM

This is a two year program in the liberal arts leading to an Associate Degree in Arts and Sciences with an emphasis in the social sciences. The objective of this program is to provide the background and skills necessary to continue study in the field of social science.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intro to Social Science I	SS110	4
U.S. History to 1865	SS250	3
Sociology	SS230	3

SPRING SEMESTER

Freshman English II*	LA101	3
Intro to Social Science II*	SS111	4
U.S. History since 1865	SS251	3
Social Problems	SS235	3

SECOND YEAR

FALL SEMESTER

Humanities I	HU200	4
General Psychology	SS220	3
Cultural Anthropology	SS260	3
Biological Science	NS100	4

SPRING SEMESTER

Humanities II	HU201	4
Child Psychology	SS221	3
Principles of Economics	SS215	3
Physical Science	NS101	4

SUGGESTED ELECTIVES

Michigan History	SS255
Speech	LA210
American Literature	LA200/LA201
Math	MA104
Intro to Philosophy	HU220
Foreign Language	FL

*See alternatives listed under requirements for the Associate Degree in Arts and Sciences (page 10).

ALLIED HEALTH
EMERGENCY MEDICAL TECHNICIAN CERTIFICATE

This is a one semester course granting a certificate of completion for the Emergency Medical Technician program. This program of study allows the successful student eligibility to challenge the Michigan Department of Public Health State Examination and be licensed as an EMT. The course requires six hours of lecture per week for 16 weeks and six hours of clinical practice in one of several local cooperating hospitals starting in the sixth week of the semester. It is recommended that the student enroll in Emergency Health Care, PE205, prior to the EMT course. 9 credit hours are required.

FALL SEMESTER

Emergency Medical Tech

AH200 9

SPRING SEMESTER

Emergency Health Care

PE205 2

RECOMMENDED SCHEDULE

APPRENTICE TRAINING CERTIFICATE

Admission into the apprenticeship training program is gained by way of employment and sponsorship by the employer and depends upon a training agreement between the employer, employee, and the United States Bureau of Apprenticeship and Training. Montcalm Community College coordinates the training plan and provides the related instruction.

Each semester of apprenticeship "related instruction" is 16 weeks in length, with the trainee usually taking two courses per semester. A competency examination may result in a waiver of a required course. Official transcripts may also be used for this purpose.

Entrance requirements are established by the employer in accordance with existing Bureau of Apprenticeship and Training standards. Continuation in the training program is dependent upon employment status and level of achievement.

The related instruction schedule shown below is for apprentice tool and die designers. Programs for machinists, plastic mold designers, mold and die makers, and auto mechanics are also available. 32 credit hours are required for completion.

FIRST LEVEL COURSES

Shop Math I	MA110	2
Shop Drawing	TD120	2
Blueprint Reading	TD105	2
Shop Math II	MA111	2

SECOND LEVEL COURSES

Sketching	HU121	2
Layout & precision Measure	TD106	2
Shop Math III	MA112	2
Ind Safety & First Aid	IT155	2

THIRD LEVEL COURSES

Machine Tool Theory	IT100	2
Industrial Quality Control	IT270	2
TIG Welding	WE125	2
Tool & Die Design I	TD135	2

FOURTH LEVEL COURSES

Tool & Die Design II	TD136	2
Metallurgy & Heat Treatment	IT130	2
Tool & Die Design III	TD137	2
Basic CNC Operation	IT102	2

THESE COURSES ARE NOT LIMITED TO APPRENTICESHIP STUDENTS ONLY.

AUTOMOTIVE SERVICING CERTIFICATE

The automotive servicing curriculum provides for the development of the skill and knowledge essential in the repair and maintenance of engines, electrical and other automotive systems. Laboratory instruction is performed on modern equipment and operating training units. 31 credit hours are required for a certificate. Personal hand tools are required.

FALL SEMESTER

Auto Tools & Hardware	AM104	1
Engine Servicing I	AM106	2
Auto Brakes & Servicing	AM108	3
Engine Servicing Theory II	AM124	2
Concepts in Electricity	EL100	3
Shop Math I	MA110	2
Improving Reading & Writing	SD175	3

SPRING SEMESTER

Auto Electrical Sys Theory I	AM140	2
Auto Electrical Sys Lab I	AM141	3
Customer Relations	BA251	2
Hydraulics & Fluid Mechanics	IT253	3
Automotive Welding	WE110	3
AM Elective		3

This program prepares the student for passing three of the state certification tests, and is intended to help the student obtain his/her first automotive maintenance job.

AUTOMOTIVE TECHNOLOGY APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE (PENDING CURRICULUM COMMITTEE APPROVAL)

This program is designed to give the technical student basic preparation in several automotive subjects, and at the same time, to provide a deeper understanding of the underlying concepts influencing business and society, of which the automobile is such an important part. Graduates may seek employment as technical representatives or sales person, or request admission to the Bachelor's Degree program with advanced standing. Personal hand tools required.

FIRST YEAR

FALL SEMESTER

Concepts in Electricity	EL100	3
Freshman English I	LA100	3
Intermediate Algebra	MA104	3
Auto Tools & Hardware	AM104	1
Engine Servicing Theory I	AM106	2
AM Elective		4

SPRING SEMESTER

Freshman English II*	LA101	3
Trigonometry	MA102	3
Intro to Elec Data Process	DP110	3
Auto Electrical Sys Theory I	AM140	2
Auto Electrical Sys Lab I	AM141	3
AM Elective		2

SECOND YEAR

FALL SEMESTER

Intro to College Physics I	NS111	3
Intro to Social Science I	SS110	4
Automatic Trans Theory	AM230	2
Automatic Trans Lab	AM231	2
Auto Elec Sys Theory II	AM142	2
AM Elective		3

SPRING SEMESTER

Intro to College Physics II	NS112	3
Intro to Social Science II*	SS111	4
Hydraulics & Fluid Mechanics	IT253	3
Automotive Parts & Serv Mgmt	AM204	2
AM Electives**		4

**AM Internship available to qualified students only.

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 7).

Approved AM electives (see pages 41-45). Other recommendations: Customer Relations (BA251), Beginning Typing (OE100), Sketching (HU121), Technical Drafting (TD100), Automotive Welding (WE110).

LICENSES AND CERTIFICATION

Professional Auto Service Technicians are required to hold a State License with certifications appropriate to their work. There are eight certification areas; each has its own test. National ASE tests and certificates are also available in these same subjects, and are accepted by most states in place of their own. Many employers prefer to hire ASE licensed technicians. MCC offers coursework, both theoretical and practical, which prepares students to pass tests in either series.

Listed below are the eight state and national testing areas, together with the recommended MCC courses needed to fully prepare for each. A person with previous training or experience, or who has not completed high school, should check with an automotive instructor for special recommendations.

BRAKES

Automotive Tools & Hardware	AM104
Automotive Brakes & Servicing	AM108
Hydraulics & Fluid Mechanics	IT253

FRONT-END SUSPENSION, STEERING

Automotive Tools & Hardware	AM104
Automotive Brakes & Servicing	AM108
Hydraulics & Fluid Mechanics	IT153
Auto Steer. & Susp. Theory	AM130
Auto Steer. & Susp. Lab	AM131

ENGINE REPAIR

Automotive Tools & Hardware	AM104
Engine Servicing I	AM106
Engine Servicing Theory II	AM124
Engine Servicing Lab II	AM125

ENGINE TUNE-UP AND PERFORMANCE

Concepts in Electricity	EL100
Auto Tools & Hardware	AM104
Engine Servicing I	AM106
Engine Servicing Theory II	AM124
Engine Servicing Lab II	AM125
Auto Engine Perf Theory I	AM210
Auto Engine Perf Lab I	AM211
Auto Engine Perf Theory II	AM212
Auto Engine Perf Lab II	AM213

MANUAL TRANSMISSIONS, DIFFERENTIALS AND DRIVE TRAINS

Automotive Tools & Hardware	AM104
Manual Transmission Theory	AM132
Manual Transmission Lab	AM133

HEATING, VENTILATING, AND AIR CONDITIONING

Automotive Tools & Hardware	AM104
Auto Heating & Air Con. Theory	AM260
Auto Heating & Air Con. Lab	AM261

AUTOMATIC TRANSMISSIONS

Hydraulics & Fluid Mechanics	IT253
Automotive Tools & Hardware	AM104
Engine Servicing I	AM106
Automatic Transmission Theory	AM230
Automatic Transmission Lab	AM231

ELECTRICAL SYSTEMS

Concepts in Electricity	EL100
Auto Tools & Hardware	AM104
Auto Electrical Sys Theory I	AM140
Auto Electrical Sys Lab I	AM141
Auto Electrical Sys Theory II	AM142
Auto Electrical Sys Lab II	AM143

**BUSINESS STUDIES
APPLIED ARTS AND SCIENCES
ASSOCIATE DEGREE
ACCOUNTING**

This is a two-year program leading to an Associate Degree in Applied Arts and Sciences with an emphasis in accounting. The objective of this program is to provide the background and skills necessary for an entrance job in the accounting field. 60 credit hours are required to obtain a degree.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Financial Accounting	BA115	3
Introduction to Business	BA135	3
Intro to Elec Data Process	DP110	3
Elective		

SPRING SEMESTER

Freshman English II*	LA101	3
Managerial Accounting	BA116	3
Speech	LA210	3
Intermediate Algebra	MA104	3

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Cost Accounting I	BA215	3
Legal Environ of Business	BA200	3
Principles of Economics	SS215	3
Elective		

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Cost Accounting II	BA216	3
Human Relations	BA250	3
Management	BA237	3
Elective		

SUGGESTED ELECTIVES

Intro to Computer Programming	DP115
Managerial Mathematics	MA116
Keyboarding	SD145

*See alternatives listed under requirements for the Associates Degree in Applied Arts and Sciences (page 7).

BUSINESS STUDIES
APPLIED ARTS AND SCIENCES
ASSOCIATE DEGREE
BUSINESS ADMINISTRATION

This is a two-year program leading to an Associate Degree in Applied Arts and Sciences with an emphasis in business administration. The objective of this program is to provide the background skills necessary for an entrance job in the business field. 60 credit hours required.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Financial Accounting	BA115	4
Introduction to Business	BA135	3
Intro to Elec Data Proc	DP110	3
Elective		

SPRING SEMESTER

Freshman English II*	LA101	3
Managerial Accounting	BA116	4
Human Relations	BA250	3
Speech	LA210	3
Elective		

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Legal Environ of Business	BA200	3
Marketing	BA233	3
Management	BA237	3
Principles of Economics	SS215	3

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Advertising	BA248	3
General Psychology	SS220	3
Elective		
Elective		

SUGGESTED ELECTIVES

Intro to Computer Programming	DP115
College Algebra	MA159
Retailing	BA234
Accounting for Small Business	BA105
Entrepreneurship	BA136
Small Business Management	BA235
Customer Relations	BA251
Financial Principles	BA252
Purchasing	BA255
Sales Management	BA265
Credits and Collections	BA268
Industrial Relations	BA273

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

**BUSINESS STUDIES
CERTIFICATE
SMALL BUSINESS DEVELOPMENT/MANAGEMENT**

The one-year certificate in Small Business Development/Management will prepare the student to handle bookkeeping, determine prices, deal with customers, employ some computer applications, and assist in new business development. 29 credit hours required.

FALL SEMESTER

Entrepreneurship	BA136	3
Intro to Elec Data Process	DP110	3
Business Mathematics	OE120	3
Legal Environ of Business	BA200	3
Marketing	BA233	3

SPRING SEMESTER

Small Business Management	BA235	3
Customer Relations	BA251	2
Acctg for Small Business	BA105	3
Microcomputers - Operating		
Systems and Applications	DP116	3
Retailing	BA234	3

**SMALL BUSINESS DEVELOPMENT/MANAGEMENT
APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE**

The two-year associate degree program is designed to prepare the student to start up a new business venture, determine vendors, price merchandise, use a microcomputer for accounting purposes, recruit and select employees and handle public relations. An Associate Degree in Applied Arts and Sciences will be awarded upon successful completion of at least 60 credit hours including the coursework described below. 60 credit hours are required.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Financial Accounting	BA115	4
Entrepreneurship	BA136	3
Intro to Elec Data Process	DP110	3
Marketing	BA233	3

SPRING SEMESTER

Freshman English II*	LA101	3
Advertising	BA248	3
Speech	LA210	3
Small Business Management	BA235	3
Elective		

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Legal Environ of Business	BA200	3
Business Mathematics	OE120	3
Principles of Economics	SS215	3
Microcomputers - Operating		
Systems and Applications	DP116	3

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Retailing	BA234	3
Customer Relations	BA251	2
General Psychology	SS220	3
Elective		

SUGGESTED ELECTIVES

Management	BA237
COBOL Programming	DP120
Managerial Accounting	BA116
Accounting for Small Business	BA105
Introduction to Business	BA135
Intro to Computer Programming	DP115

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

BUSINESS DATA PROCESSING
APPLIED ARTS AND SCIENCES
ASSOCIATE DEGREE

This is a two-year program leading to an Associate Degree in Applied Arts and Sciences with a specialty in Business Data Processing. The objective of this program is to provide the background and skills necessary for an entrance job in the business data processing field. 60 credit hours required.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100 ✓	3
Financial Accounting	BA115 ✓	4
Introduction to Business	BA135	3
Intro to Elec Data Process	DP110	3
Elective		

SPRING SEMESTER

Freshman English II*	LA101 ✓	3
Managerial Accounting	BA116 ✓	4
Human Relations	BA250	3
Intro to Computer Program	DP115	3
Elective		

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Legal Environ of Business	BA200	3
Management	BA237 ✓	3
COBOL Programming	DP120	3
Systems Concepts/Design	DP240	3

SPRING SEMESTER

Intro to Social Science II*	SS111	4
RPGII Programming	DP125	3
Programming Project	DP290	3
Speech	LA210 ✓	3

THIS PROGRAM IS BEING REVISED AND UPDATED FOR FALL 1987. PLEASE REQUEST A SEPARATE DESCRIPTION SHEET FROM THE STUDENT SERVICES OFFICE

Students are urged to learn typing in high school or early in this program.

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

COSMETOLOGY CERTIFICATE

The Cosmetology Program is approved by the Michigan Department of Licensing and Regulations and prepares students to take the State Licensing Board Examination. Instruction is scheduled for five days per week, four and one-half hours per day and includes over 1,500 hours of training. Over 900 hours will be spent in laboratory work during which students practice and apply services studied in the classroom setting. A licensed cosmetology instructor directs students' activities in a completely equipped cosmetology laboratory. 32 credit hours and 1500 attendance hours are required for a certificate.

FIRST YEAR

FALL SEMESTER*

Intro to Cosmetology	CS100	3
Intro to Cosmetology Lab	CS110	4
Beginning Hairstyling	CS101	3
Beginning Hairstyling Lab	CS111	4

SPRING SEMESTER*

Beginning Hair Cutting and Permanent Waving	CS102	3
Beginning Hair Cutting and Permanent Waving Lab	CS112	4
Beginning Hair Coloring and Professional Development	CS103	3
Beginning Hair Coloring and Professional Development Lab	CS113	4

SECOND YEAR

FALL SEMESTER*

Advanced Hairstyling	CS200	3
Advanced Hairstyling Lab	CS210	5
Advanced Hair Coloring and Permanent Waving	CS201	3
Advanced Hair Coloring and Permanent Waving Lab	CS211	5

SPRING SEMESTER*

Advanced Hairstyling II	CS202	3
Advanced Hairstyling II Lab	CS212	5
Salon Management and Board Review	CS203	3
Salon Management and Board Review Lab	CS213	5

*18 Week semester program -- all courses are 9 weeks.

COSMETOLOGY STUDENTS WILL HAVE AN ADDITIONAL COST FOR UNIFORMS, SHOES AND LOCKER RENTAL.

Students wishing to earn an Associate Degree in Applied Arts and Sciences must complete additional courses required for this degree (page 11).

**CRIMINAL JUSTICE - CORRECTIONS
CERTIFICATE
(PENDING CURRICULUM COMMITTEE APPROVAL)**

This 15 credit hour certificate program is specifically designed to qualify students to apply for correction officer positions with the Department of Corrections. To be hired, students must pass a written exam, physical fitness test, and a personal interview. Background investigations are also conducted.

FALL SEMESTER

Intro to Corrections	CJ110	3
Legal Issues in Corrections	CJ220	3
Client Relations in Corrections	CJ250	3

SPRING SEMESTER

Corrections Institutions/ Facilities	CJ120	3
Client Growth & Development	CJ260	3

**CRIMINAL JUSTICE - CORRECTIONS
APPLIED ARTS AND SCIENCES
ASSOCIATE DEGREE
(PENDING CURRICULUM COMMITTEE APPROVAL)**

This associate degree program is designed to prepare the successful graduate for a career in corrections with increased opportunities. It includes the 15 credit hours needed for a certificate (and job application), plus normal degree requirements and other career related courses. It also is designed to provide maximum transferability to those four year colleges and universities which offer a Bachelor's Degree in Criminal Justice or related fields.

FIRST YEAR

FALL SEMESTER

Intro to Corrections	CJ110	3
Freshman English I	LA100	3
Intro to Social Science I	SS110	4
Intro to Criminal Justice	CJ100	3
Elective		

SPRING SEMESTER

Corrections Institutions/ Facilities	CJ120	3
Freshman English II*	LA101	3
Intro to Social Science II*	SS111	4
Personal Self-Defense	PE115	1
Elective		

SECOND YEAR

FALL SEMESTER

Humanities I	HU200	4
Speech	LA210	3
Legal Issues in Corrections	CJ220	3
Emergency Health Care	PE205	2
Client Relations in Corrections	CJ250	3
Stress Management	SD120	1

SPRING SEMESTER

Humanities II	HU201	4
American Criminal Law	CJ210	3
Client Growth & Development	CJ260	3
Internship-Corrections**+	CJ290	5
Report Writing**	XY240	1

**Classes under development

+Additional 290's will be added for police, fire, public safety, etc., as need arises

*See alternatives listed under the requirements of the Associate Degree in Applied Arts and Sciences (page 11).

DRAFTING CERTIFICATE

The drafting certificate is intended to help the student find his/her first job as a detailer or a drawing changer and is considered as a first step toward an associate degree. Many of these courses will apply to the associate degree. 30 credit hours required.

FALL SEMESTER

Basic Machine Operation	IT220	3
Shop Math I or Elementary Algebra (MA100)	MA110	2
Improved Reading & Writing	SD175	3
Technical Drafting I	TD100	3
Blueprint Reading	TD105	2
Intro to Elec Data Process	DP110	3

SPRING SEMESTER

Customer Relations	BA251	2
Sketching	HU121	2
Hydraulics & Fluid Mechanics	IT253	3
Manufacturing Processes	IT260	2
Shop Math II or Inter Algebra (MA104)	MA111	2
Technical Drafting II	TD130	3

The alternate math courses are recommended for those with adequate background who are considering the Associate Degree at a later date.

DRAFTING TECHNOLOGY APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE

The sequence of courses shown below allows students to earn an associate degree in applied arts and sciences in two years of school as a full-time student. Students who wish to attend school part-time need not necessarily adhere to this exact sequence. Please check with your counselor. 60 credit hours required.

FIRST YEAR

FALL SEMESTER

Metallurgy & Heat Treatment	IT130	2
Basic Machine Operation	IT220	3
Freshman English I	LA100	3
Intermediate Algebra	MA104	3
Technical Drafting I	TD100	3

SPRING SEMESTER

Sketching	HU121	2
Manufacturing Processes	IT260	2
Freshman English II*	LA101	3
Trigonometry	MA102	3
Descriptive Geometry	TD110	3
Technical Drafting II	TD130	3

SECOND YEAR

FALL SEMESTER

Concepts of Electricity	EL100	3
Product Design	TD215	3
Intro to Social Science I	SS110	4
Jig & Fixture Design	TD230	3
Intro to Elec Data Process	DP110	3

SPRING SEMESTER

Customer Relations	BA251	2
Hydraulics & Fluid Mechanics	IT253	3
Intro to Social Science II*	SS111	4
Tool & Die Design I	TD135	2
Computer Aided Drafting I	TD250	3

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

** May substitute Plastic Mold Design I (TD140)

ELECTRONICS TECHNOLOGY CERTIFICATE

This one-year certificate is intended to help the student find his/her first job in repair and servicing of routine electronic devices. It is considered a first step toward the associate degree and many of these courses apply directly. 30 credit hours required.

FALL SEMESTER

Improving Reading & Writing	SD175	3
Intermediate Algebra	MA104	3
Concepts in Electricity	EL100	3
Electronic Circuit Analysis	EL110	3
Elective (DP110 recommended)		

SPRING SEMESTER

Customer Relations	BA251	2
Trigonometry	MA102	3
Electronic Circuits	EL210	3
Electronic Devices	EL120	3
Elective (EL251 and EL252 recommended)		

ELECTRONICS TECHNOLOGY APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE

This program prepares the student for diagnosis and repair of complex electronic devices. It may be transferable as a package to a four year university. Through proper selection of electives, emphasis may be placed upon communications, computers, or industrial electronics. See your counselor or the instructor. 60 credit hour required for the degree, at least 30 must be EL courses

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intermediate Algebra	MA104	3
Concepts of Electricity	EL100 ✓	3
Electronic Circuit Analysis	EL110	3
Intro to Elec Data Process	DP110	3

SPRING SEMESTER

Freshman English II*	LA101	3
Trigonometry	MA102	3
Electronic Test Equipment	EL160 ✓	3
Electronic Devices	EL120	3
Elective (EL)		

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Intro to College Physics I	NS111	3
Microprocessors I	EL141	3
Microprocessors II	EL241	1
Digital Electronics	EL230	3
Elective (EL)		

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Intro to College Physics II	NS112	3
Customer Relations	BA251	2
Electronic Circuits	EL210	3
Elective (EL)		

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

FOOD SERVICE TECHNOLOGY CERTIFICATE

The one-year program in Food Service Technology is a 30 credit hour program designed to provide students with the skills and technical knowledge necessary to prepare them for entry level employment in the Food Service/Restaurant industry. Students completing this program will have basic skills in food preparation, nutrition, and menu planning.

FALL SEMESTER

Intro to Food Service	FST100	3
Food Service Safety & Sanitation	FST101	2
Food Production Skills - General	FST110	4
Elective		
Elective		

SPRING SEMESTER

Food Production Skills - Entree	FST120	4
Meat and Portion Control	FST130	3
Nutrition and Menu Planning	FST140	3
Elective		
Elective		

FOOD SERVICE TECHNOLOGY APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE

The two-year program in Food Service Technology is a 61 credit hour program designed to provide students with the skills and technical knowledge necessary to prepare them for entry level employment in the Food Service/Restaurant industry. Students completing this program will have basic skills in food preparation, nutrition and menu planning, hotel and restaurant management, and small business operation as it relates to the food industry. In addition, they will fulfill all the requirements for an Applied Arts and Sciences Degree.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Business Mathematics	OE120	3
Intro to Food Services	FST100	3
Food Service Safety and Sanitation	FST101	2
Food Production Skills - General	FST110	4

SPRING SEMESTER

Freshman English II*	LA101	3
Intro to Business	BA135	3
Food Production Skills - Entree	FST120	4
Meat and Portion Control	FST130	2
Nutrition and Menu Planning	FST140	3

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Equipment Design, Layout and Selection	FST200	2
Food Service Management	FST201	3
Food Production Skills - Bakery	FST210	4

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Small Business Management	BA235	3
Humanities I	HU200	4
Food Production Skills - Catering	FST220	4
Food Purchasing	FST230	3

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

INDUSTRIAL TECHNOLOGY
APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE

The Industrial Technology graduate will have a well-rounded background, which prepares him/her for work in manufacturing and process industries as planners, buyers, or as technicians. In addition, transfer to a four-year Bachelor's Degree Program is possible. The training offers many hours of practical, hands-on experience to complement the theory 61 credit hours required.

FIRST YEAR

FALL SEMESTER

Basic Machine Operation	IT220	3
Freshman English I	LA100	3
Elementary Algebra	MA100	3
Technical Drafting I	TD100	3
Intro to Elec Data Process	DP110	3

SPRING SEMESTER

Sketching	HU121	2
Hydraulics & Fluid Mechanics	IT253	3
Manufacturing Processes	IT260	2
Freshman English II*	LA101	3
Intermediate Algebra	MA104	3
Layout & Precision Measure	TD106	2

SECOND YEAR

FALL SEMESTER

Concepts in Electricity	EL100	3
Basic CNC Operation	IT102	2
Metallurgy & Heat Treatment	IT130	2
Intro to College Physics I	NS111	3
Intro to Social Science I	SS110	4

SPRING SEMESTER

Industrial Quality Control	IT270	2
Customer Relations	BA251	2
Trigonometry	MA102	3
Intro to College Physics II	NS112	3
Intro to Social Science II*	SS111	4
Welding Elective		

STUDENTS ARE URGED TO LEARN TYPING IN HIGH SCHOOL OR EARLY IN THIS PROGRAM

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

MACHINE TOOL OPERATION CERTIFICATE

Students who complete this program are eligible to obtain entry-level jobs in metal working industries as machinist helpers. Many of the following courses are also applicable toward an Associate Degree or an Apprenticeship Certificate. 30 credit hours required.

FALL SEMESTER

Basic Machine Operation	IT220	3
Basic Writing Skills or Freshman English I (LA100)	SD170	2
Basic CNC Operation	IT102	2
Metallurgy & Heat Treatment	IT130	2
Shop Math I or Elementary Algebra (MA100)	MA110	2
Blueprint Reading	TD105	2
Welding Tech & Joint Prep	WE107	3

SPRING SEMESTER

Advanced Machine Operation	IT221	3
Layout & Precision Measure	TD106	2
Manufacturing Processes	IT260	2
Hydraulics & Fluid Mechanics	IT253	3
Shop Math II or Intermediate Algebra (MA104)	MA111	2
Industrial Quality Control	IT270	2

NURSING CERTIFICATE

Our Nursing curriculum is designed to promote career mobility for the student. A student who completes one year is awarded a certificate in Practical Nursing and is eligible to write the National Council Licensing Examination (NCLEX-PN) for licensure and practice as a Licensed Practical Nurse (LPN). Students who meet the admission criteria are eligible to progress directly to second year of the Associate Degree Program.

FALL SEMESTER - 16 WEEKS

Nursing Skills I	NUR100	4
Food in Health & Disease	NUR110	2
Clinical Practicum I	NUR115	3
Concepts of Interpersonal Relationships	NUR120	2
Intro to Medical-Surgical Nursing I	NUR150	2
Anatomy & Physiology I	NS103	4
Child Psychology	SS221	3
Introduction to Physical Fitness	PE110	1

SPRING SEMESTER - 16 WEEKS

Nursing Skills II	NUR101	2
Clinical Practicum II	NUR116	10
Maternal-Child Nursing I	NUR145	3
Medical-Surgical Nursing II	NUR151	3
Pharmacology	NUR160	2

SUMMER SEMESTER - 8 WEEKS

Clinical Practicum III	NUR117	6
Nursing Seminar	NUR125	1
Medical-Surgical Nursing III	NUR152	1

NURSING

APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE

Our Nursing curriculum is designed to promote career mobility for the students. A student who completes two years is awarded an Applied Arts and Sciences Degree and becomes eligible to write the National Council Licensing Examination (NCLEX-RN) for licensure and practice as a Registered Nurse (RN). Students who have previously completed a LPN program are eligible to be considered for advanced standing in the program. (Prior to admission into the second year program, LPN students are required to enroll in the following two courses offered in the summer semester: Role Transition-NUR100-2 credits, and Physical Fitness-PE110-1 credit.

FALL SEMESTER - 16 WEEKS

Nursing Skills I	NUR100	4
Food in Health & Disease	NUR110	2
Clinical Practicum I	NUR115	3
Concepts of Interpersonal Relationships	NUR120	2
Intro to Medical-Surgical Nursing I	NUR150	2
Child Psychology	SS221	3
Anatomy & Physiology I	NS103	4
Intro to Physical Fitness	PE110	1

SPRING SEMESTER - 16 WEEKS

Nursing Skills II	NUR101	2
Clinical Practicum II	NUR116	10
Maternal Child Nursing I	NUR145	3
Medical-Surgical Nursing II	NUR151	3
Pharmacology	NUR160	2

SUMMER SEMESTER - 8 WEEKS

Clinical Practicum III	NUR117	6
Nursing Seminar	NUR125	1
Medical-Surgical Nursing III	NUR152	2
Role Transition	NUR200	2

SECOND YEAR

FALL SEMESTER - 16 WEEKS

Advanced Medical-Surgical Nursing	NUR251	10
Freshman English I	LA100	3
Anatomy & Physiology II	NS203	4
General Psychology	SS220	3

SPRING SEMESTER - 16 WEEKS

Maternal Child Nursing II	NUR245	6
Community Mental Health	NUR255	6
Freshman English II*	LA101	3
Microbiology	NS201	4
Political Science or Intro to Social Science I	SS110	3/4

SUMMER SEMESTER - 4 WEEKS

Leadership Role in Nursing	NUR225	3
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*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

OFFICE EDUCATION
CERTIFICATE
CLERK TYPIST

The objective of the Clerk-Typist curriculum is preparation for employment in a variety of office occupations which include the development of skills in the use of all office machinery and the knowledge needed to carry out routine office functions. Previous training in typing is desirable. A certificate will be awarded upon successful completion of the program requirements. A student wishing to continue training may apply credits earned toward the secretarial or management programs. 31 credit hours required.

FALL SEMESTER

Intermediate Typing	OE101 ✓	3
Acct for Small Business	BA105 ✓	3
Business Mathematics	OE120 ✓	3
Business Communications I	OE129 ✓	3
Word Processing I	OE225 ~	4

SPRING SEMESTER

Business Communications II	OE130 ✓	3
Advanced Typing	OE202 ✓	3
Voice Transcription	OE220 ~	3
Office Procedures	OE230	3
Business Calculators	OE240 ~	3

OFFICE EDUCATION
APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE
EXECUTIVE SECRETARY

The graduate of the Executive Secretarial Science Curriculum will have a knowledge of business technology and a skill in dictation and accurate transcription of business letters and reports. The graduate is prepared to be employed as a stenographer or a secretary. Stenographers are primarily responsible for taking dictation and transcribing letters, memoranda, or reports. The secretary, in addition to taking dictation, is responsible for meeting office callers, screening telephone calls, and assisting the executive. An Associate Degree in Applied Arts and Sciences will be awarded upon successful completion of at least 60 credit hours, including the coursework below.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intermediate Typing	OE101	3
Business Mathematics	OE120	3
Business Communications I	OE129	3
Business Calculators	OE240	3

SPRING SEMESTER

Freshman English II*	LA101	3
Business Communications II	OE130	3
Advanced Typing	OE202	3
Voice Transcription	OE220	3
Word Processing I	OE225	4

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Shorthand I	OE103	4
Acctg for Small Business	BA105	3
Elective		
Elective		

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Records Management	OE175	3
Shorthand II	OE104	4
Office Procedures	OE230	3
Elective		

SUGGESTED ELECTIVES

Introduction to Business	BA135
Human Relations	BA250
Intro to Elec Data Process	DP110
Word Processing II	OE226
Word Processing III	OE227
Field Experience	OE290
Shorthand III	OE203

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

**OFFICE EDUCATION
CERTIFICATE
LEGAL OFFICE ASSISTANT**

This one-year program leads to a certificate as a Legal Office Assistant. The curriculum provides the student with the background and understanding of legal office assisting, practices, and procedures. 32 credit hours required.

FALL SEMESTER

Legal Environ of Business	BA200	3
Intermediate Typing	OE101	3
Acctg for Small Business	BA105	3
Business Communications I	OE129	3
Legal Term & Transcription	OE205	3

SPRING SEMESTER

Advanced Typing	OE202	3
Legal Office Procedures	OE206	3
Voice Transcription	OE220	3
Word Processing I	OE225	4
Business Calculators	OE240	3

**LEGAL SECRETARY
APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE**

This program leads to a two-year Associate Degree in Applied Arts and Sciences. The Legal Secretarial program is designed to prepare for employment and/or advancement for students who wish to specialize in legal shorthand and transcription and legal office procedures. An Associate Degree in Applied Arts and Sciences will be awarded upon successful completion of at least 60 credit hours including the coursework below.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intermediate Typing	OE101	3
Business Mathematics	OE120	3
Business Communications I	OE129	3
Business Calculators	OE240	3

SPRING SEMESTER

Freshman English II*	LA101	3
Advanced Typing	OE202	3
Voice Transcription	OE220	3
Word Processing I	OE225	4
Elective		

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Legal Environ of Business	BA200	3
Shorthand I	OE103	4
Acctg for Small Business	BA105	3
Legal Term & Transcription	OE205	3

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Shorthand II	OE104	4
Legal Office Procedures	OE206	3
Office Procedures	OE230	3
Elective		

SUGGESTED ELECTIVES

Introduction to Business	BA135
Human Relations	BA250
Intro to Elec Data Process	DP110
Word Processing II	OE226
Word Processing III	OE227
Business Communications II	OE130
Field Experience	OE290
Shorthand III	OE230

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

**OFFICE EDUCATION
CERTIFICATE
MEDICAL OFFICE ASSISTANT**

This one-year program leads to a certificate as a Medical Office Assistant. The curriculum provides the student with a background and understanding of medical office assisting and practice in medical office procedures. 30 credit hours required.

FALL SEMESTER

Intermediate Typing	OE101	3
Acctg for Small Business	BA105	3
Business Communications I	OE129	3
Medical Terminology	OE207	3
Word Processing I	OE225	4

SPRING SEMESTER

Emergency Health Care	PE205	2
Advanced Typing	OE202	3
Medical Office Procedures	OE208	3
Voice Transcription	OE220	3
Business Calculators	OE240	3

**MEDICAL SECRETARY
APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE**

This program leads to a two-year degree in Applied Arts and Sciences. The Medical Secretarial program is designed to prepare the student for employment and/or advancement in a physician's office; hospital; medical supply house; local, state, or federal health agency; voluntary health agency; medical college; health insurance firm; or related area. An Associate Degree in Applied Arts and Sciences will be awarded upon successful completion of at least 60 credit hours including the coursework below.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intermediate Typing	OE101	3
Business Mathematics	OE120	3
Business Communications I	OE129	3
Business Calculators	OE240	3

SPRING SEMESTER

Freshman English II*	LA101	3
Advanced Typing	OE202	3
Voice Transcription	OE220	3
Word Processing I	OE225	3
Elective		

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Shorthand I	OE104	4
Acctg for Small Business	BA105	3
Medical Terminology	OE207	3
Elective		

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Emergency Health Care	PE205	2
Shorthand II	OE104	4
Medical Office Procedures	OE208	3
Office Procedures	OE230	3

SUGGESTED ELECTIVES

Introduction to Business	BA135
Human Relations	BA250
Intro to Elec Data Process	DP110
Word Processing II	OE226
Word Processing III	OE227
Business Communications II	OE130
Field Experience	OE290
Shorthand III	OE203

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

OFFICE EDUCATION
CERTIFICATE
STENOGRAPHER

This 32-credit-hour program is planned for the high school graduate who has majored in business and desires advanced studies to perfect skills, but who can spend only one year in college. A student who has little or no previous business training and can spend only one year in college may also wish to follow this curriculum. This is a one-year certificate program. Upon completion of this intensive program, a certificate of achievement will be awarded.

FALL SEMESTER

Intermediate Typing	OE101	3
Shorthand I	OE103	4
Acctg for Small Business	BA105	3
Business Mathematics	OE120	3
Business Communications I	OE129	3

SPRING SEMESTER

Advanced Typing	OE202	3
Shorthand II	OE104	4
Voice Transcription	OE220	3
Office Procedures	OE230	3
Business Calculators	OE240	3

OFFICE EDUCATION
CERTIFICATE
WORD PROCESSING

This one-year program leads to a certificate in Word Processing and provides the student with a background and understanding of different types of electronic office equipment. This program is designed to prepare the student for initial employment in the Word Processing field. 31 credit hours required.

FALL SEMESTER

Intro to Elec Data Process	DP110	3
Intermediate Typing	OE101	3
Business Mathematics	OE120	3
Business Communications I	OE129	3
Word Processing I	OE225	4

SPRING SEMESTER

Business Communications II	OE130	3
Advanced Typing	OE202	3
Voice Transcription	OE220	3
Office Procedures	OE230	3
Word Processing II	OE226	3

WORD PROCESSING
APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE

The graduate of this two-year associate degree program will have a knowledge of business concepts and skill in the use of several types of electronic office equipment. The student is prepared to be employed as either a word processing secretary and/or an administrative secretary. Advancement may also be attained for those students who wish to further specialize in related fields. An Associate Degree in Applied Arts and Sciences will be awarded upon successful completion of at least 60 credit hours including the coursework below.

FIRST YEAR

FALL SEMESTER

Freshman English I	LA100	3
Intermediate Typing	OE101	3
Business Mathematics	OE120	3
Business Communications I	OE129	3
Business Calculators	OE240	3

SPRING SEMESTER

Freshman English II*	LA101	3
Business Communications II	OE130	3
Advanced Typing	OE202	3
Voice Transcription	OE220	3
Word Processing I	OE225	4

SECOND YEAR

FALL SEMESTER

Intro to Social Science I	SS110	4
Intro to Elec Data Process	DP110	3
Acctg for Small Business	BA105	3
Word Processing II	OE226	3
Elective		

SPRING SEMESTER

Intro to Social Science II*	SS111	4
Records Management	OE175	3
Word Processing III	OE227	3
Office Procedures	OE230	3
Elective		

SUGGESTED ELECTIVES

Introduction to Business	BA135
Human Relations	BA250
Field Experience	OE290

*See alternatives listed under requirements for the Associate Degree in Applied Arts and Sciences (page 11).

RADIOLOGIC TECHNOLOGY **APPLIED ARTS AND SCIENCES ASSOCIATE DEGREE**

A "One-Plus-One" approach, the Radiologic Technology curriculum is offered in cooperation with Mid-Michigan Community College. This program is designed for students who live in the Montcalm Community College service area and are interested in pursuit of this highly technical program. All Radiological Technology courses (22 credit hours) are taught at Mid-Michigan Community College. The clinical course (26 credit hours) will be arranged locally. The liberal arts, science, and prerequisite courses (31 credit hours) are available at Montcalm.

FIRST YEAR

FALL SEMESTER (MONTCALM)

Medical Terminology**	OE207	3
Anatomy and Physiology I**	NS103	4
Introductory Chemistry**	NS105	4
General Psychology	SS220	3
Freshman English I	LA100	3
Physical Education Elective		

SPRING SEMESTER (MONTCALM)

Anatomy and Physiology II	NS203	4
Political Science	SS240	3
Intro to Elec Data Process	DP110	3
Speech	LA210	3
Elective		

****Prerequisite Courses**

All documents, testing, and prerequisites should be completed and submitted to Mid-Michigan Community College by May 1st to be eligible to begin Radiologic Technology classes by next fall at Mid-Michigan Community College

SECOND YEAR

FALL SEMESTER (MID-MICHIGAN)

Intro to Radiologic Tech	RAD100	3
Radiologic Positioning I	RAD105	2

SPRING SEMESTER (MID-MICHIGAN)

Radiation Physics	RAD110	3
Principles of Radiation Exposure	RAD115	3
Radiologic Positioning II	RAD125	2

SUMMER SEMESTER (MID-MICHIGAN)

Radiologic Positioning III	RAD175	2
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THIRD YEAR

THIS BEGINS THE 50-WEEK CLINICAL COMPONENT TO BE ARRANGED LOCALLY

FALL SEMESTER

Clinical Education I	RAD200	10
Radiologic Techniques I	RAD215	3

SPRING SEMESTER

Clinical Education II	RAD220	10
Radiologic Techniques II	RAD217	3

SUMMER SEMESTER

Clinical Education III	RAD225	6
Radiographic Quality Assurance	RAD230	1

Associate in Applied Science Degree is awarded by Mid-Michigan Community College with a major in Radiologic Technology. Graduates are eligible to apply for the Certification Examination offered by the American Registry of Radiologic Technologists.

**WELDING TECHNOLOGY
CERTIFICATE**

Welding is a skill which is essential to many industries. This program stresses the development of techniques and understanding of quality weldments. Effects of heat and stress on welded materials are studied and practiced in the laboratory. The student may develop sufficient skill for American Welding Society Certification* and will receive a Certificate of Achievement upon successful completion of program requirements below. Additional welding courses are available for those who wish to develop their skills even further. 32 credit hours required.

FALL SEMESTER

Basic Machine Operations	IT220	3
Welding Tech & Joint Prep	WE107	3
Welding & Fabrication I	WE108	3
Shop Math I	MA110	2
Blueprint Reading	TD105	2
Metallurgy & Heat Treatment	IT130	2
Basic Writing Skills	SD170	2

SPRING SEMESTER

Welding & Fabrication II	WE120	3
Related Welding Skills	WE122	3
Layout & Precision Measure	TD106	2
Sketching	HU121	2
Customer Relations	BA251	2
Hydraulics & Fluid Mechanics	IT253	3

*THE COLLEGE DOES NOT ATTEMPT TO CERTIFY WELDERS

COURSE CODE INDEX

These two pages will help locate descriptions of individual courses, such as HU122, Introduction to Art, and LA210, Speech. Use the index below in the following manner: Find the subject matter in which you are interested, the letter prefix that follows tells where to find descriptions of the courses which cover that subject matter. For example, art course descriptions would be found under HU.

Accounting/BA
Acting/LA
Advertising/BA
Algebra/MA
Allied Health/AH
Analytic Geometry/MA
Anatomy/NS
Anthropology/SS
Art/HU
Art (Appreciation)/HU
Automotive Mechanics/AM
Biology/NS
Blueprint Reading/TD
Bookkeeping/OE
Botany/NS
Business Communications/OE
Business Correspondence/OE
Business Law/BA
Business Mathematics/OE
Calculus/MA
Ceramics/HU
Chemistry/NS
Communications/LA
Communications/(Business)/OE
Composition/LA
Computer Programming/DP
Computers/DP
Correspondence/OE
Cosmetology/CS
Criminal Justice/CJ
Data Processing/DP
Die Drafting (Apprentice)/TD
Diesel Engine/AM
Directed Studies/XV
Drafting Technology/TD
Drafting & Design (App)/TD
Drama/LA
Drawing/HU
Economics/SS
Electricity/Electronics/EL
English/LA
Entrepreneurship/BA
Executive Secretary Studies/OE
Finance (Personal)/BA
Fitness/PE

Food Service/FST
French/FL
General Business/BA
Geography/SS,NS
Government/SS
Heat Treatment Metals (App.)/IT
History/SS
Humanities/HU
Human Relations/BA
Hydraulics/IT
Industrial Supervision & Management/BA
Journalism/LA
Law (Business)/BA
Law Enforcement/LE
Legal Secretary/OE
Literature/LA
Machine (Lab) (App.)/IT
Machine Shop/IT
Management/BA
Marketing/BA
Mathematics/MA
Mathematics (App.)/MA
Mathematics (Business)/OE
Medical Shorthand/OE
Medical Terminology/OE
Metallurgy Theory (App.)/IT
Mold Making & Die Casting (Apprentice)/TD
Music/HU
Natural Science/NS
Nursing (Practical)/NUR
Nursing (ADN)/NUR
Office Practice/OE
Oral Interpretation/LA
Painting/HU
Philosophy/HU
Photography/HU
Physical Fitness/PE
Physical Education/PE
Physical Science/NS
Physics/NS
Physiology/NS
Plastics/IT/TD
Political Science/SS

Psychology/SS
Radiologic Technology/RAD
Reading/SD
Religion/HU
Safety and First Aid/IT
Salesmanship/BA
Science/NS
Sculpture/HU
Secretarial Studies/OE
Shop Drawing/TD
Shorthand/OE
Sketching/HU
Small Business/BA
Social Science/SS
Sociology/SS
Spanish/FL
Speech/LA
Sports/PE
Statistics/MA
Supervision and Management/BA
Taxation (Business)/BA
Technical Drafting/TD
Theater/LA
Tool Drafting (App.)/TD
Transcription/OE
Trigonometry/MA
Typewriting/OE
Welding (Trades (App.))/WE
Welding Technology/WE
Word Processing/OE
Writing/LA,SD
Zoology/NS

COURSE DESCRIPTIONS

IN THIS SECTION, DESCRIPTIONS OF ALL COURSES OFFERED AT MONTCALM COMMUNITY COLLEGE ARE GIVEN. THESE ARE LISTED ALPHABETICALLY.

NUMBERS IN THE PARENTHESIS () WHICH FOLLOW COURSE TITLES REPRESENT THE TOTAL CREDITS, HOURS OF LECTURE/DEMONSTRATION, AND HOURS OF LABORATORY IN THAT ORDER. (FOR EXAMPLE, (3,2,2) REPRESENTS FOUR SEMESTER HOURS OF CREDIT GIVEN FOR THE COURSE, TWO OF THE HOURS WILL BE LECTURE/DEMONSTRATION, AND TWO OF THE HOURS WILL BE LABORATORY-TYPE CLASSES.) IN SOME CASES THE INSTRUCTOR WILL ASSIGN ADDITIONAL LABORATORY HOURS. SEE DIAGRAM BELOW FOR ILLUSTRATION.

*Number of lecture/demonstration hours

Number of semester hours of
credit given

*Number of laboratory hours

TD250 Computer Aided Drafting (3,2,2) **Prerequisites: TD100, ***Co-requisites: TD130 or student must have written departmental approval
This course consists of computer-generated graphics to include: terminology, techniques and application of computer aided drafting, CAD, to engineering, tool design, architecture, and electronics. Two dimensional design drafting is stressed. Four hours lecture/laboratory combination.

*Combined these equal the total number of classroom/laboratory contact hours.

**Prerequisites: A prerequisite is a course required to have been successfully completed prior to enrollment in another course. They are indicated following the course titles. Students must have written approval from the appropriate instructional department if the prerequisite has not been met.

***Co-requisites: A co-requisite is a course which, if not taken ahead of time, must be taken at the same time. Co-requisites are indicated following course titles. Students must have written approval from the appropriate instructional department if the co-requisite has not been met.

ALLIED HEALTH

- AH100 Introduction to ORT (1,1,0) Prerequisites: None**
This course will provide the student with background information regarding technician functions, the background of surgical practice, a brief history of how surgery has evolved over the centuries, correct usage of medical terminology, and units of weights and measures. Emphasis will focus on the student code of behavior and will include ethical, moral, and legal responsibilities
- AH101 Body Structure and Function (4,4,0) Prerequisites: None**
The student will acquire a broad foundation in regard to basic understanding of body structure and functions. Each system will be studied independently and the interrelationships of the body systems will be emphasized.
- AH102 Microbiology (2,2,0) Prerequisites: None**
This course will provide the learner with a firm understanding of microbiology so that a clear appreciation of the relationship of micro-organisms with the maintenance of health and the prevention of disease will be maintained, especially as it applies to the practice of operating room technology. The trainee will learn that infection control requires constant vigilance and interdepartmental cooperation. A thorough understanding of the principles involved in sterilization procedures will be developed.
- AH105 Food Service for Health Care Facilities I (1,1,0) Prerequisites: None**
This course is intended for people employed in food service. Basic includes: communications, sanitation, safety, food handling, regulations, nutrition and therapeutic diets.
- AH106 Food Service for Health Care Facilities II (1,1,0) Prerequisites: AH105**
This is a continuation of course AH105 for food service personnel. Nutrition and life cycles, menu planning, meal preparation, equipment, storage and service procedures will be studied.
- AH107 Health Care Housekeeping (1,1,0) Prerequisites: None**
This course will examine the following principles of sanitation and disinfection, basic and special cleaning procedures with emphasis on cleaning of the isolation unit, floor maintenance and pest control. Related areas to be covered are patient-housekeeping relations, accident prevention, principles of good body mechanics, and institutional purposes and organization.
- AH125 Adult Foster Care in Michigan (1,1,0) Prerequisites: None**
This is a course that covers the history and philosophy of Adult Foster Care and role in the continuum of services to mentally ill, mentally retarded, and aging clients. Funding, licensing, systems that impact Adult Foster Care and the role of the caregiver will also be covered.

AH220 Coronary Care (4,3,2) Prerequisites: None
This course is an introduction to the principles of nursing management of the patient with heart disease. Emphasis will be on identification of cardiac dysrhythmias and therapeutic intervention.

STUDENTS SHOULD HAVE COMPLETED AH125, ADULT FOSTER CARE IN MICHIGAN (1,1,0) AS A PREREQUISITE FOR THE FOLLOWING ONE CREDIT COURSES.

AH110 Adult Foster Care Programming (1,1,0) Prerequisites: AH125
This is a skill development course that assists the Adult Foster Care caregiver in becoming an integral part of a client's learning. Participants will be provided with information and opportunities to learn specific skills of observation, client assessment and successful teaching principles. A program instrument will be provided that allows caregivers to incorporate many variables that affect the client's learning, e.g. family, friends, physical environment of the home, the community.

AH135 The Aging Process (1,1,0) Prerequisites: AH125
This course covers a description and a clarification of the aging process historical and current approaches to working with the elderly, and the role of the Adult Foster Care Program and the caregiver.

AH136 Programs for Aged Residents (1,1,0) Prerequisites: AH125
As a result of this course, providers will be able to establish programs for elderly residents of Adult Care Facilities. Included are practical tips for getting started and ensuring success. Providers will learn how to identify needs/problems, develop an individual or group program, prepare a schedule of activities, and locate resources that can assist in program planning.

AH145 Mental Retardation (1,1,0) Prerequisites: AH125
This course covers the definition, causes and classification of mental retardation, historical and current approaches to working with mentally retarded, and the role of an Adult Foster Care program and the caregiver.

AH146 Programs for Mentally Retarded Residents (1,1,0) Prerequisites: AH125
This is a skill development course that presents techniques to access and teach mentally retarded adult foster care residents. The Techniques will be applicable to all ranges of learning, from basic care to skills needed for independent community living. The course will provide an opportunity to participants to design, implement, and assess programs for their present clients.

AH155 Health Care/Incidents and Accidents (1,1,0) Prerequisites: AH125
This is a skill development course that covers the techniques of emergency care specifically relevant to the Adult Foster Care setting

- AH160 AFC Foods and Nutrition (1,1,0) Prerequisites: AH125**
AFC Foods and Nutrition is designed to provide a problem-solving approach to improving resident nutritional status and caregiver kitchen efficiency. The beginning units build upon each other from nutrients to food groups to meal planning to food selection to storage and sanitation. The remaining units deal with special issues in AFC homes, such as special diets, nutrient/drug interactions, teaching/eating skills, and identifying nutrition resources.
- AH165 Facility Environmental Management (1,1,0) Prerequisites: AH125**
This course reviews good staffing procedures, including hiring policy, staff evaluation, inservice training, responsibility delegation, time management, staff "burn-out," and insuring proper environment conducive to resident growth. The course is specifically designed for the caregiver who has supervision of staff and provides direct resident care.
- AH170 Activity Programming for the Adult Foster Care Resident (1,1,0) Prerequisites: None**
This is a skill development course that covers development of recreation and leisure time activities as a part of the overall program for a client. The course will include developing activity for in-the-home and in-the-community for groups and individuals.
- AH175 Health Care/Human Growth and Development (1,1,0) Prerequisites: AH125**
This course will review body systems and discuss the normal aging process, summarize common ailments, and discuss common terminology which will be useful in future courses.
- AH176 Death and Dying (1,1,0) Prerequisites: AH125**
This course will explore the concept of death and dying as it impacts on all types of individual residents of various ages, home environment, and families.
- AH180 Support Staff Development (1,1,0) Prerequisites: AH125**
This course is intended to meet the varied aspects of the needs expressed by the employees in an AFC Facility. The orientation is focused on training for the cook, substitute worker, aide, laundry worker, bookkeeper, driver, housekeeper, and other persons who have contact with the residents. The philosophy of Adult Foster Care, licensing regulations, and inspection of attitudes, understanding, and behavior toward residents will be presented.
- AH190 Attitude and Behavior Management in AFC (1,1,0) Prerequisites: AH125**
A practical course in how to deal effectively with difficult behaviors and attitudes. A number of allowable approaches, including behavior modification, will be considered and discussed. Examples: dealing with the residents who pose a fire hazard with smoking; helping a resident overcome a negative attitude; turning hostility into helpfulness; assisting a resident to "get motivation," dealing with drug abuse problems. Other topics will also be discussed.

AH195 Understanding and Working with the Mentally Ill (1,1,0) Prerequisites: AH125

This course will describe and explain the major types of mental disorders. This will include anxiety disorders, depression, personality disorders, and schizophrenia. Also presented and discussed will be guidelines in approaching and working with residents with these disorders.

AH196 Programs for Mentally Ill Residents (1,1,0) Prerequisites: AH125

This is a skill development course that gives the caregiver specific techniques in assisting mentally ill clients develop skills for moving toward independent living. The course will provide an opportunity for participants to design, implement, and assess programs for their present clients.

AH200 Emergency Medical Technician (9,6,6) Prerequisites: None

This course includes orientation to the EMT, legal responsibilities, anatomy, physiology, diagnostic signs, triage, basic cardiac life support, injuries to the body, illnesses of the body, childbirth, mental health, environmental injuries, communications and emergency vehicles (including extrication). Upon successful completion the student will be eligible to challenge the Michigan Department of Public Health State Exam.

AUTOMOTIVE MECHANICS TECHNOLOGY

- AM104 Automotive Tools & Hardware (1,1,0) Prerequisites: None**
A study of the standard tools-of-the-trade, their proper and improper use and care, their several size designations, and their current sources and costs.
- AM106 Engine Servicing I (2,1,2) Prerequisites: None**
This is a course dealing with general engine servicing and principles of operation. Emphasis will be given to proper installation, adjustment, and inspection of belts, hoses, sparkplugs, ignition points, and filters. Simple test devices will be included as well as use of human sensory perception.
- AM108 Auto Brakes and Servicing (3,1,3) Prerequisites: AM104**
This is a course dealing with general chassis servicing and light maintenance. Included are battery servicing, fuses, wipers, bulbs, tires, and lubrication. Emphasis will be given to rebuilding and servicing brake systems and components
- AM114 Basic Small Engine Repair (2,1,1,) Prerequisites: None**
This course provides a basic knowledge of the operation, maintenance, and minor repair procedures of small gasoline engines. This course is not recommended as an approved elective for the associate degree.
- AM118 Auto Maintenance-for the Homemaker (2,1,1,) Prerequisites: None**
This course provides the necessary knowledge to recognize danger signals, handle emergency problems, make minor repairs, and perform general maintenance on the automobile. This course is not recommended as an approved elective for the associate degree.
- AM124 Engine Servicing Theory II (3,0,4) Pre- or Co-requisites: AM106**
This course covers cylinder head and crankcase details of construction, operations, and nomenclature. Methods of inspecting and rebuilding are discussed, as students are introduced to specification charts. For full benefit enroll in AM125 at the same time.
- AM125 Engine Servicing Lab II (3,0,4) Pre-or-Co-requisite: AM104, AM124 or student must have written departmental approval**
This lab course gives students the opportunity to experience the use of special procedures, tools, measuring instruments, test devices, and specifications as applied to engine rebuilding.
- AM130 Automotive Steering and Suspension Theory (2,2,0) Pre- or Co-requisites: AM108, IT253 or student must have written departmental approval**
This course covers principles, history, and methods of servicing the many varieties of systems in use today. For full benefit, enroll in AM131 at the same time.
- AM131 Automotive Steering and Suspension Lab (2,0,3) Pre- or Co-requisites: AM104, AM130 or student must have written departmental approval**
This course gives useful practical experience in diagnosing troubles, repairing and adjusting systems covered in AM130.

- AM132 Manual Transmissions Theory (2,2,0) Prerequisites: None**
This course covers principles, history, and methods of servicing the many varieties of manual transmissions, differentials, and drivelines in use today. For maximum gain, enroll in AM133 at the same time.
- AM133 Manual Transmissions Lab (2,0,3) Pre- or Co-requisites: AM104, AM132, or student must have written departmental approval.**
This course gives useful practical experience in diagnosing troubles, repairing and adjusting manual transmissions, differentials, and drivelines covered in AM132.
- AM140 Automotive Electrical Systems Theory I (2,2,0) Pre- or Co-requisites: EL100**
This course includes the principles of operation, servicing, troubleshooting and repairing the several starting and charging systems in use today. For full benefit, enroll in AM141 at the same time.
- AM141 Automotive Electrical Systems Lab I (3,0,4) Pre- or Co-requisites: AM104 AM140**
This course gives students valuable practical experience in the use of tools and test equipment for performing the tasks learned in AM140 above.
- AM142 Automotive Electrical Systems Theory II (2,2,0) Pre- or Co-requisites: EL100**
A very complete study of the many electrical systems* used in automobiles. Included are lighting, warning, heating, motor and solenoid circuits. Wiring diagrams and symbols are also emphasized. For best results, enroll in AM143 at the same time. *Except starting, charging, and ignition.
- AM143 Automotive Electrical Systems Lab II (3,0,4) Pre- or Co-requisites: AM104 AM142**
This course gives students valuable practical experience in servicing, troubleshooting and repair of the several systems studied in AM142 above.
- AM160 Auto Restoration: Metal Bodywork (2,1,2) Prerequisites: None**
A course for developing knowledge and skill in traditional metal forming, joining, and smoothing methods, as used on older automobiles primarily. Leading and preparation for painting are included, but painting is not. Students may bring their own parts to class. A materials fee is added.
- AM164 Automotive Restoration: Surface Preparation and Painting (2,1,2) Prerequisites: None**
In addition to the technical aspects of surface preparation, priming, finishing materials and their application, this course deals with the special artistic touches, which make a good paint job become a work of beauty. It is intended for the meticulous craftsman. A materials fee is added.
- AM204 Automotive Parts and Service Management (2,2,0) Prerequisites: None**
This course deals with the day-to-day operation of a parts and servicing department. Techniques of coding, pricing, inventory control, scheduling, estimating, quality control, and personnel management are presented by our experienced staff and occasional guest speakers

- AM210** Automotive Engine Performance Theory I (2,2,0) Pre- or Co-requisites: AM124, or student must have written departmental approval
This course covers the principles of operation, diagnosis, and repair of several kinds of carburetors, fuel injectors, and turbochargers as used in today's automobiles. To insure more complete understanding, enroll in AM211 at the same time.
- AM211** Automotive Engine Performance Lab I (2,0,3) Pre- or Co-requisites: AM210, AM104
This course follows the student to apply the knowledge gained in AM210 to service, diagnose, and repair the units studied. Use of special analytical equipment is stressed.
- AM212** Automotive Engine Performance Theory II (2,2,0) Pre- or Co-requisites: AM211, EL100, or student must have written departmental approval
A study of the several types of ignition and emission control systems in use today. Included are principles of operation, servicing, and troubleshooting. To insure maximum understanding, enroll in AM213 at the same time.
- AM213** Automotive Engine Performance Lab II (3,0,4) Pre- or Co-requisites: AM212
This lab gives students many opportunities to apply the theories gained in AM212 above. Emphasis is given to use of special test equipment in troubleshooting and adjusting systems after rebuilding or repair.
- AM230** Automatic Transmission Theory (2,2,0) Pre- or Co-requisites: AM106, IT253?
This is a study of the history, principles, parts, and operation of several makes of automatic transmissions. Hydraulic, mechanical, electrical and vacuum functions are all covered thoroughly. For best results, enroll in AM231 below.
- AM231** Automatic Transmission Lab (2,0,3) Pre- or Co-requisites: AM104, AM230, or student must have written departmental approval
This is a course dealing with removal, replacement, rebuilding, and tests for automatic transmissions. It encourages application of all principles learned in AM230 above.
- AM254** Diesel Engine Theory (3,3,0) Prerequisites: None
This is a study of basic diesel engine principles of operation and related components. This course prepares the student for servicing and troubleshooting operational engines. For most efficient learning, students should enroll in AM255 below.
- AM255** Diesel Engine Lab (3,0,4) Pre- or Co-requisites: AM104, AM254, or student must have written departmental approval
This course is designed to furnish the student the necessary technical knowledge and the practical experience to service, repair, and diagnose diesel engines used in the truck, automobile, farm, or heavy equipment applications.

AM260 Automotive Heating and Air Conditioning Theory (2,2,0) Prerequisites: None.

This course includes the several different systems and components used for heating and air conditioning in today's vehicles. Also included are testing, troubleshooting, and servicing techniques. For practical experiences, enroll in AM261 at the same time.

AM261 Automotive Heating and Air Conditioning Lab (2,0,3) Pre- or Co-requisites: AM260, AM104, or student must have written departmental approval

This course allows students to apply the knowledge gained in AM260 by providing several service opportunities on operating systems, using special test equipment.

BUSINESS ADMINISTRATION

- BA105** **Accounting for Small Business (3,3,0)** Prerequisites: None
This course provides basic accounting principles and practices, from a theoretical and practical approach, with emphasis on the small business.
- BA115** **Financial Accounting (4,4,0)** Prerequisites: None
An introduction to accounting and fundamentals; the meaning and purpose of accounting statements, balance sheets, and profit and loss statements. The theory of debits and credits; accounts payable and receivable; the trial balance; adjusting and closing entries; accounting for notes, interest, unearned and accrued items are examined.
- BA116** **Managerial Accounting (3,3,0)** Prerequisites: BA115, or student must have written departmental approval
Basic procedures for accumulating and using the accounting data needed for managerial planning, controlling, and decision making.
- BA135** **Introduction to Business (3,3,0)** Prerequisites: None
An introduction to the environment, nature, and opportunities of business. The study of ownership and operation of business including: marketing, location and layout, personnel, finance, controls for decision making, and the legal environment of business.
- BA136** **Entrepreneurship (3,3,0)** Prerequisites: None
This course examines the nature and characteristics of the entrepreneur--the risk-taker; and the roles of business creators in American society. In addition, this course looks at the critical factors and special problems associated with the process of creating potential business ventures.
- BA200** **The Legal Environment of Business (3,3,0)** Prerequisites: None
An introduction to the legal system and the common body of knowledge as it relates to the environment of business, providing emphasis on business relations with society and government.
- BA215** **Cost Accounting I (3,3,0)** Prerequisites: BA116
A study of cost information systems and accumulation procedures for the purpose of budgetary planning. The recording of and preparation of factory overhead, material, and labor costs in a form acceptable in AICPA will be taught.
- BA216** **Cost Accounting II (3,3,0)** Prerequisites: BA215
Planning for profits and sales and controlling of costs and profits are covered. Emphasis will be placed on cost and profit analysis.
- BA233** **Principles of Marketing (3,3,0)** Prerequisites: None
An introduction to marketing, with special emphasis upon retailing from the standpoint of both consumers and businessmen, including the establishment, financing, and organizing of merchandising institutions, as well as buying and selling procedures.

- BA234** **Retailing (3,3,0)** Prerequisites: BA233, or student must have written departmental approval
A continuation of BA233 with emphasis placed upon control of the store operation.
- BA235** **Small Business Management (3,3,0)** Prerequisites: None
This is a study of the operation of small business. Included in the course are topics dealing with organization, financial structure, record keeping, and promotion of small business. Also included are topics dealing with salesmanship, personnel relations, customer psychology, and business law.
- BA236** **Production Management (3,3,0)** Prerequisites: MA159
The management functions as applied to the production of products. The inputs of capital, labor, design, and purchasing are covered with emphasis upon the process including all types of control.
- BA237** **Management (3,3,0)** Prerequisites: None
This is a study of management with three primary purposes: to cover in detail the managerial process, to understand the purposes of organizations and how they function, and to understand human behavior as it relates to organizations.
- BA246** **Tax Accounting (3,3,0)** Prerequisites: None
Local, state, and federal taxes of sole proprietorships, partnerships, and corporations are studied. Tax practices and procedures relating to assessment and collections are also covered.
- BA248** **Advertising (3,3,0)** Prerequisites: None
The role of advertising in society is investigated along with its institutions and media. The creation and planning of advertising is covered along with effective promotional activities.
- BA250** **Human Relations (3,3,0)** Prerequisites: None
Study of the methods of selecting and training personnel, discipline problems, morale, wages, fringe benefits, promotions, separations, and other related areas.
- BA251** **Customer Relations (2,2,0)** Prerequisites: None
Exploration of the ways and means of making good first impressions, maintaining satisfaction, communicating effectively, handling complaints, and avoiding the mistakes which offend customers. Emphasis will be given to face-to-face as well as telephone contacts.
- BA252** **Financial Principles (3,3,0)** Prerequisites: None
Monetary and credit systems are covered extensively with emphasis placed on meeting the demand for funds, the factors affecting the supply of funds, and monetary and credit policies and problems.

- BA253 Principles of Investment (3,3,0)** Prerequisites: BA135, or student must have written departmental approval
An introduction to the securities market with special attention to corporate securities and financial policies including: limited income securities, common stock, and special classes of securities. Security analysis, and portfolio development policies.
- BA255 Purchasing (3,3,0)** Prerequisites: BA237
The purchasing department's role in logistics, objectives, and contributions are studied. Coordination of purchasing with other management functions such as materials management, the computer, and ethics are studied.
- BA265 Sales Management (3,3,0)** Prerequisites: None.
To provide the student with necessary background in organization, management, and operation of an effective sales force. The laws of effective selling are covered extensively.
- BA268 Credits and Collections (3,3,0)** Prerequisites: None
This course is designed to provide the student with understanding of basic credit principles, by explanation of credit as a tool, analysis of dealer's and individuals' ability to pay, use of credit references, and development of skills and techniques normally used in a credit department for collection of past due accounts.
- BA273 Industrial Relations (3,3,0)** Prerequisites: None
The components of personnel problems, supervision skills, organization, manpower, and employment development are investigated. Incentives and management responsibilities are covered also.

CONSUMER EDUCATION

CE033 Basic Income Tax Preparation (5,5,1) Prerequisites: None

The H & R Block Income Tax Course enables the interested student, with no prior knowledge, to begin to gain a solid and working understanding of the intricacies surrounding most income tax returns. Study includes illustrated lectures, discussions and the practical use of tax forms. There are 27 three-hour classes. Students who successfully complete the course are awarded the H & R Block certificate of achievement. The five (5) hours credit may be used only for general credit and are not applicable to any business requirement for one- or two-year business curricula.

CE040 Red Cross Multimedia First Aid & CPR (1,1,0) Prerequisites: None

This course will provide fundamental principles and skills in basic first aid and accident prevention. Participants will also be prepared, through knowledge and skill development, to meet the needs of most situations in which CPR is needed and medical assistance is not excessively delayed.

CE100 Basic Consumerism (3,3,0) Prerequisites: None

A course in developing basic consumer principles and skills to meet the ever-challenging and ever-changing demands of day-to-day living in a free enterprise, economic system. The course emphasizes consumer protection, resource management, decision-making, planning for food buying, purchasing health services, insurances, using community resources and credit.

COSMETOLOGY

- CS100 Introduction to Cosmetology (3,3,0) Prerequisites: None**
This course is an orientation to the science of cosmetology and includes cosmetology laws and rules as well as sterilization and sanitation techniques and policies. Basic hair shapings and finger waving will also be covered in this course.
- CS101 Beginning Hairstyling (3,3,0) Prerequisites: None**
Student will gain more experience in finger waving and learn the basics of pin-curling, shampooing, manicuring and facials. The use and care of cosmetology equipment will also be covered.
- CS102 Beginning Hair Cutting and Permanent Waving Theory (3,3,0) Prerequisites: None**
This course will provide further training in the elements of basic hairstyling and an introduction to hair shaping, permanent waving and scalp and hair treatments. Basic electrical theory as related to cosmetology and the use of thermal and specialized electrical equipment will also be covered.
- CS103 Beginning Hair Coloring and Professional Development Theory (3,3,0) Prerequisites: None**
This course will cover basics in hair coloring, chemical hair relaxing, wiggery and professional development and ethics.
- CS110 Introduction to Cosmetology Lab (4,0,8) Prerequisites: None**
This course provides students with laboratory experiences in the science of cosmetology and includes cosmetology laws and rules as well as sterilization and sanitation techniques and policies. The student will practice basic hair shapings and finger waving.
- CS111 Beginning Hairstyling Lab (4,0,8) Prerequisites: None**
This course will provide students with laboratory experiences in the practice of finger waving, and the practice of basic pin-curling, shampooing, manicuring, and facials. The use of cosmetology equipment will be stressed.
- CS112 Beginning Hair Cutting and Permanent Waving Lab (4,0,8) Prerequisites: None.**
This course provides students with laboratory experiences in basic hairstyling and hair shaping, permanent waving and scalp and hair treatments. Basic electrical theory as related to cosmetology will be applied and the use of thermal and specialized electrical equipment will be practiced.
- CS113 Beginning Hair Coloring and Professional Development Lab (4,0,8) Prerequisites: None**
This course will provide students with laboratory experience in haircoloring, chemical hair relaxing, wiggery and professional development and ethics.

- CS200 Advanced Hairstyling (3,3,0) Prerequisites: CS101, CS111**
This course will provide students with an introduction to cosmetic chemistry. Students will receive training in advanced hairstyling and shaping.
- CS201 Advanced Hair Coloring and Permanent Waving (3,3,0) Prerequisites: CS103, CS113.**
This course is a continuation of advanced hairstyling with special emphasis on coloring and permanent waving. The basics of trichology will also be presented.
- CS202 Advanced Hairstyling II (3,3,0) Prerequisites: CS101, CS111**
This course continues to develop the student's technical skills in hairstyling, shaping, coloring and permanent waving. A continuation of the science of trichology will further be developed.
- CS203 Cosmetology Salon Management and Board Review Theory (3,3,0)**
Prerequisites: CS210, CS211
This course will provide training to students in salon management techniques, professional ethics, and job preparation skills. A review of all theoretical and practical experiences will be covered in a 35-hour segment of this course, designed to prepare students for the State Board Licensing Examination.
- CS210 Advanced Hairstyling Lab (5,0,10) Pre or Co-requisite: CS200**
This course will provide students with laboratory experiences in cosmetic chemistry at the introductory level. Students will practice advanced hairstyling and shaping.
- CS211 Advanced Hair Coloring and Permanent Waving Lab (5,0,10) Prerequisites: CS200, CS210**
This course will provide students with laboratory experiences in advanced hairstyling with emphasis on coloring and permanent waving. The student will become familiar with the basics of trichology.
- CS212 Advanced Hairstyling Lab II (5,0,10) Pre- or Co-requisites: CS202**
This course will provide the students with further laboratory experiences in the technical skill of hairstyling, shaping, coloring, and permanent waving. Further study in the science of trichology will be stressed and further development of all basic skills learned through our program will be improved.
- CS213 Salon Management and Board Review Lab (5,0,10) Pre- or Co-requisites: CS203.**
This course will provide students with training in salon management techniques, professional ethics and job preparation skill in the laboratory setting. A review of all theoretical and practical experiences will be covered in 35-hour segment of this course, which is designed to prepare students for the State Board Licensing Examination. Special emphasis will be placed on the Pre-Board Examination.

CS250 Cosmetology Instructional Internship (16,9,22) Prerequisites: Student Must Have Written Departmental Approval
This course is taught on a tutorial basis in an active school setting, giving the student experience in a large variety of training situations. Only one student is enrolled at a time, and he/she is expected to devote approximately 28 hours per week throughout the 18 week course. Emphasis will be on methods of presentation, record keeping, safety, regulations, and customer/student relations.

CRIMINAL JUSTICE

- CJ100 Introduction to Criminal Justice (3,3,0) Prerequisites: None**
This course provides the student with a broad overview of the history and scope of the American Criminal Justice System.
- CJ110 Introduction to Corrections (3,3,0) Prerequisites: None**
This course is designed for persons employed in or interested in a career within the broad field of correctional administration. This course will review where corrections in America originated, where it is today, where it seems to be going, and some of the issues which need to be resolved. Emphasis is to be placed on the multi-faceted approach to corrections in our contemporary society.
- CJ120 Corrections Institutions/Facilities (3,3,0) Prerequisites: None**
This course provides the student with a concentrated overview of correctional institutions and facilities. It is designed primarily for students intending to pursue a career in the criminal justice system or for those already employed within the system. It has relevance to other students pursuing a social science orientation. The course explores federal, state, county, and local facilities, including maximum, close, medium, and minimum custody facilities. It addresses community facilities, co-educational facilities, and the safety and security requirements and considerations related to each. Constitutional and managerial issues are stressed. The course includes historical developments and philosophy, sociological concepts, definitions and concepts, and their application. The interplay of policy, procedures, management, law, and facility design is stressed.
- CJ125 Police Administration and Operations (3,3,0) Prerequisites: None**
This course is for students pursuing careers in the criminal justice system or for those already employed within the system. This course explores the evolution of administrative theory with special emphasis on its impact and application at the operational level of law enforcement agencies.
- CJ130 Criminal Investigation (3,3,0) Prerequisites: None**
This course includes the basic principles of modern criminal investigation techniques including crime scene search, collection and preservation of evidence, follow-up investigation, police criminalistics, and court preparation and testimony.
- CJ210 American Criminal Law (3,3,0) Prerequisites: None**
For persons seeking employment in the criminal justice system. The course includes the historical development and philosophy of criminal law, including legal definitions, concepts, and their application to the criminal justice system.

- CJ220 Legal Issues in Corrections (3,3,0) Prerequisites: None**
This course provides the student with a broad overview of legal issues related to corrections in the United States. It is designed primarily for students intending to pursue a career in the criminal justice system or those already employed within the system. It has relevance to all students pursuing a social science orientation. The course explores legal conflicts arising from the rights of the accused, the convicted, society, and those who work within the system. Constitutional limitations are stressed, as is the impact of law on correctional practice. The course includes historical developments and philosophy, as well as definitions, concepts, and their applications.
- CJ230 Juvenile Delinquency (3,3,0) Prerequisites: None**
This course is designed for students interested in or already employed within the criminal justice system. This introductory course includes: theories of delinquency causation, examination of the family relationship and juvenile delinquency, the juvenile justice system, and delinquency prevention programs.
- CJ240 Introduction to Security Systems (3,3,0) Prerequisites: None**
This course is designed for persons employed in or interested in a career within the broad field of public and private security administration
- CJ250 Client Relations in Corrections (3,3,0) Prerequisites: None**
This course is designed to acquaint the student with the principles of human relations as they relate to the criminal offender. Topics to be covered will include the meaning and function of culture, minorities, discrimination, and affirmative action; attitude formation, human relations skills, and professional responses to human behavior.
- CJ260 Client Growth and Development (3,3,0) Prerequisites: None**
This course is designed to acquaint the student with the conditions which promote the growth and development of criminal offenders. The course will differentiate between normal and criminal behavior; will trace the social, psychological, and biological development of offenders; identify specific problems related to offenders; and propose a set of intervention strategies.
- CJ290 Corrections Internship**
Under development

DATA PROCESSING

- DP110 Introduction to Data Processing (3,3,0) Prerequisites: None**
This course provides a basic understanding of computer system fundamental, with emphasis on microcomputers. A brief introduction to programming using BASIC is also included. The students will do exercises on a micro computer as part of their class assignments.
- DP112 Introduction to BASIC (1,1,0) Prerequisites: DP110, or student must have written departmental approval.**
A BASIC language introduction. This course is intended for students who have had no prior exposure to programming and may not feel quite ready to start right into the full effort of DP115. It is intended to be a pre-DP115 course. Only the very elementary statements of BASIC will be covered and some hands-on use of the microcomputers to give a first exposure to their use. Students who have completed DP110 with less than a B are encouraged to consider this course as a stepping stone to DP115.
- DP115 Introduction to Computer Programming (3,2,2) Prerequisites: DP110, OE120,**
This is the first computer programming course. Microcomputers and the programming language "BASIC" are the primary tools. Included are programming concepts and problem-solving techniques, structured basic programming; files and file manipulation techniques, understanding and using built-in features and available software. Programming assignments will reflect personal, business, and scientific applications.
- DP116 Microcomputers: Operating Systems and Applications (3,2,2,)**
Prerequisites: DP110 or student must have written departmental approval. This course is not a substitute for DP115.
This course will introduce the student to the operating systems used on today's microcomputers. The main emphasis will be on MS-DOS (Micro-Soft Disk Operating System), which is used on the IBM-PC and its compatibles. The student will also be introduced to some Commercial Application Software, File Management, Report Generation, Word Processing, and Spreadsheets. The PFS series from Software Publishing Company will be used on both the Apple and IBM-PC.
- DP120 COBOL Programming (3,2,2,) Prerequisites: DP110, DP115.**
This course provides an elementary understanding of the principles and techniques of writing computer programs in COBOL. Features and capabilities of COBOL will be used in solving business-related problems. Topics covered will be: computer programming, flowcharting, data storage, and procedural study.
- DP121 Introduction to Computer Language/Fortran (3,2,1) Prerequisites: DP110**
FORTRAN is a computer language used to communicate commands to a computer. Completion of the course will enable students to flowchart problems and then program this information as instructions for the computer. Topics include: write statement, read statement, format statement, do-loops, arrays, subroutines, and addition I/O statements.

- DP122 Introduction to Pascal (3,2,2)** Prerequisites: DP110, ~~DP115~~, or student must have written departmental approval.
This course provides an elementary understanding of the principles and techniques of writing computer programs in PASCAL. Topics covered will include: problem solving, algorithm development, structured programming techniques, module design, and dynamic storage concepts.
- DP125 RPG II Programming (3,2,2)** Prerequisites: DP110, ~~DP115~~.
RPG II Programming provides an elementary understanding of the principles and techniques of writing business-related programs in RPG II. The course will be heavily oriented to hands-on programming. Topics covered will be: program design; flowcharts/pseudocode; report generation; editing; file concepts and use; table processing; and other features of RPG II.
- DP215 Advanced Programming in Basic (3,2,2)** Prerequisites: DP110 and DP115 or student must have written departmental approval.
Advanced Programming in BASIC is a follow-up course to DP115. This course will cover additional and more indepth topics in programming in the BASIC language.
- DP240 Systems Concepts/Design (3,3,0)** Prerequisites: DP120.
Systems development methodology as applied to the analysis, design and implementation of manual and computerized systems. Topics include; the role of the System Analyst; system investigation; design of systems output, input, files, processing and controls; project management and implementation. Students will have the opportunity to participate in the analysis and design of a simulated business system.
- DP290 Programming Project (3,1,4)** Prerequisites: DP240, BA135, BA116.
A comprehensive laboratory project requiring the student to conduct a detailed analysis and implementation of a data processing application program or system.

ELECTRICITY/ELECTRONICS

EL100 Concepts in Electricity (3,2,2) Prerequisites: MA100

The purpose of this course is to give a student a basic knowledge of electrical components, AC and DC circuits, and electrical measuring instruments. Other topics include: schematic symbols, power, capacitance, inductance, impedance, magnetism, electro-magnetism, transformers, and motors. This course emphasizes a "hands-on" approach, with the use of modern components and equipment.

EL110 Electronic Circuit Analysis I (3,2,2) Prerequisites: EL100, MA104.

Electronic Circuit Analysis is a course in the use of mathematics as a tool in analyzing working and defective circuitry. Although primarily lecture, some lab time is used for demonstrations and class assignments.

EL120 Electronic Devices (3,2,2) Prerequisites: EL110, Co-requisites: MA102,

The student will study many electrical and electronic components, including; inductors, capacitors, transformers, diodes, transistors, and integrated circuits. Applications such as filters, resonant circuits, and basic amplifier configurations will be used to reinforce the student's knowledge.

EL141 Microprocessors I (3,2,1.5) Prerequisites: None

This course is an introduction to microcomputer structure and programming, with the Motorola 6800 microprocessor used for examples. Topics include number systems and codes, microcomputer basics, computer arithmetic, an introduction to programming, and the 6800 microprocessor. Laboratory time is provided for developing and executing machine language programs.

EL160 Electronic Test Equipment (3,2,2,) Prerequisites: EL241

This course will explore the use of test equipment in electronic servicing. A variety of servicing examples will be used ranging from audio amplifiers to computer systems. Many practical troubleshooting hints will be offered, including the use of the human senses.

EL210 Electronic Circuits (3,2,2) Prerequisites EL120, Co-requisites: EL120.

This course is a study of electronic component applications. This will cover basic power supplies, regulated power supplies, amplifiers, including: audio, RF, and power types, and some basic digital and pulse circuitry. Construction and analysis of these circuits will be included in the laboratory experiments, along with proper soldering and desoldering techniques.

EL230 Digital Electronics (3,2,2) Prerequisites: EL120

This course is a study of techniques used in building and analyzing digital circuitry. Course topics include: numbering and coding systems, digital integrated circuits, Boolean algebra, combinational and sequential logic circuits, digital counters, and computer fundamentals.

- EL241 Microprocessors II (1,.5,1) Pre- or Co-requisites: EL141, EL230**
This course continues EL141's discussion of microprocessors, with emphasis on circuits required in computer interfacing. Basic keyboard and display interfacing will be discussed in lecture and built in lab.
- EL251 Industrial Electrical Maintenance I (2,1,1) Prerequisites: EL100**
This course is for those who have an understanding of electrical basics and want to learn more about industrial motors and their controls. Included is a study of the National Electrical Code, wiring symbols and diagrams, motors, and basic control circuits.
- EL252 Industrial Electrical Maintenance II (2,1,1) Prerequisites: EL251**
2 Co.
This course builds on knowledge and skills taught in EL251 and is for students having a good understanding of basic industrial motor circuits. Included is a study of the National Electric Code, timing circuits, speed control, reduced voltage starting and troubleshooting.
- EL253 Industrial Electrical Maintenance III (2,1,1) Prerequisites: EL252**
This course will emphasize programmable controllers, their use, selection, setup, and servicing. This course is designed to give the electrician an understanding of the programmable controller, its logic functions, its installation, and troubleshooting.
- EL261 Electronic Communications (2,0,3) Prerequisites: EL210**
Electronic Communications is a course in communications systems, such as AM and FM radio, television, and digital data links. Antenna systems are also included. This is an advanced course for those students interested in employment as a radio, television, or telephone technician.
- EL271 Microprocessor Interfacing (3,0,4) Prerequisites: EL241**
This course is a continuation of the study of microprocessors. The course will be primarily concerned with standard peripheral devices, and how they are interfaced into a microprocessor system. In addition, more advanced microprocessor systems, such as the 6800, will be studied.
- EL281 Robotics and Industrial Electronics (3,0,4) Prerequisites: EL241**
This course is a study of industrial robots, which includes their classification, operation, programming, and functional analysis. Additional topics include motors, sensors, and control systems.

FOOD SERVICE TECHNOLOGY

FST100 Introduction to Food Service (3,3,0) Prerequisites: None

This course provides students with an introduction to the Food Service Industry. A study of the many divisions of the industry, their function and relationship to careers for the student will be covered. The course will provide information on each of the many types of food service and the employment potential found in each.

FST101 Food Service Sanitation (2,2,0) Prerequisites: None

This course provides an indepth analysis of guidelines for effective food service sanitation. The course will provide information and methods to help the food service manager apply sanitation procedures to food handling functions.

FST110 Food Production Skills--General (4,2,4) Prerequisites: FST101

This course presents the various food production methods geared toward quantity food production. The class will include basic terminology and special consideration of safety and sanitation in a "hands on" type experience. The course will include preparation of all types of meals.

FST120 Food Production Skills--Entree (4,2,4) Prerequisites: FST101

A continuation of FST110 with special emphasis on preparation of both luncheon and dinner entrees.

FST130 Meat and Portion Control (2,1,2) Prerequisites: FST101

This course provides a study of meat, its relationship to menu and how costs can affect menus. The student will be able to identify meat cuts and the methods of preparation for each. Special emphasis on meat quality and its significance to customer satisfaction and profitability will also be covered.

FST140 Nutrition and Menu Planning (3,3,0) Prerequisites: None

This course presents a study of normal nutrition and how food is absorbed into the body. Students will study menu planning with a special emphasis on nutritional value and menu attractiveness. Special projects in all areas of menu planning will be included to insure students will gain experience that will assist them in the food service industry.

FST200 Equipment Design, Layout, Selection (2,1,2) Prerequisites: None

In this course students will study the equipment and facilities available to the food service industry. A student project will consist of the overall design and equipment layout for maximum productivity and the selection of the actual equipment based on desired function, quality and performance of a specific food service facility.

- FST201 Food Service Management (3,3,0) Prerequisites: None**
In this course students will study the manager's role in the operation of a food service establishment. The course will include both the study of people and their performance as well as management controls and their relationship to the successful management of a food service operation.
- FST210 Food Production Skills--Bakery (4,2,4) Prerequisites: FST101**
A continuation of FST110 and FST120, with special emphasis on preparation of all baked products, including cake and pastry decoration.
- FST220 Food Production Skills Catering (4,1,5) Prerequisites: FST101**
In this course the student will study the types and methods of catering operations. Special emphasis will be placed upon obtaining practical experiences in the planning of menus and preparation of hors d'oeuvres and other items appropriate for various themes.
- FST230 Food Purchasing (3,3,0) Prerequisites: None**
In this course students will study the standards of quality and quantity in purchasing as applied to all phases of the food service operation. Students will gain experience in the proper selection of all types of food service equipment ranging from place settings in the dining room to a broiler in the kitchen. All types of food and grocery selection will also be covered. Particular emphasis will be placed on standardized procedures and specifications for each purchase.

FOREIGN LANGUAGES

- FL120 Elementary French I (4,4,0)** Prerequisites: None
Fundamental training in basic language skills stressing oral and written expression as well as aural comprehension. Open to students with no French background or one year of high school French. Students electing this class should plan to take FL121 second semester.
- FL121 Elementary French II (4,4,0)** Prerequisites: FL120
A continuation of French 120
- FL130 Elementary Spanish I (4,4,0)** Prerequisites: None
This is the first half of a year long beginning Spanish course. This course is designed primarily around conversational approaches to the language, but does include instruction in the basics of Spanish grammar. Lectures and written exercises will supplement an emphasis on the oral recitation and classroom conversation. In addition, pertinent aspects of Hispanic culture will be examined.
- FL131 Elementary Spanish II (4,4,0)** Prerequisites: FL130
A continuation of Elementary Spanish 130.

HUMANITIES

- HU100 Fundamentals of Music (3,3,0) Prerequisites: None**
This course includes the development of the techniques necessary to the understanding and knowledge of music fundamentals. Students shall have the opportunity to develop basic skills in reading and writing music, along with sight singing, ear training, rhythmic organization, and keyboard familiarity.
- HU101 Music Appreciation (3,3,0) Prerequisites: None**
An introduction to the various styles of music, the course is designed to increase the student's understanding, awareness and enjoyment of music through the development of proper listening habits. Class presentations will include records and demonstrations.
- HU110 Music in the Elementary Classroom (3,2,1) Prerequisites: None**
This course is designed to increase the student's awareness of music programs for the elementary grades. Stressing creative experiences, use of appropriate materials and methods pertinent to the elementary classroom, and the development of music fundamentals is emphasized.
- HU111 Teaching Drawing to Children (1,.5,.5) Prerequisites: None**
This is a basic drawing course for people interested in learning to draw what they see. Topics covered are contour, light and shadow, perspective, and proportions of the human figure. A method of instruction appropriate for use with children or the adult beginner in art is also taught.
- HU112 Teaching Ceramics to Children (1,.5,.5) Prerequisites: None**
This is an introductory hands-on course in working with clay. Students will learn many handbuilding techniques for making pottery and sculpture, decorating and glazing techniques, and the loading and firing of electric and sawdust kilns.
- HU113 Teaching Sculpture to Children (1,.5,.5) Prerequisites: None**
This course provides instruction and practical experience in the creation of various types of sculpture. Emphasis will be given to modeling, carving, and assembling techniques using low cost materials suitable for children or the adult beginner in art.
- HU114 Teaching Painting to Children (1,.5,.5) Prerequisites: None**
This course provides instruction and practical experiences in the use of color, composition, and various painting media to create paintings, emphasizing materials and techniques suitable for children or the adult beginner in art.
- HU115 Teaching Printmaking to Children (1,.5,.5) Prerequisites: None**
This course provides instruction and practical experience in the use of various printmaking media and techniques to create designs and prints, emphasizing materials and techniques suitable for children or the adult beginner in art.

- HU119 Teaching Art Appreciation to Children (1,1,0) Prerequisites: None**
Topics covered in this course will include lecture/discussion of works of art using prints or actual art objects, experiments involving perception and the elements and principles of design, and demonstrations of the methods and materials used by artists to create art forms.
- HU118 Art Materials and Methods-Studio (1,.5,.5) Prerequisites: None**
This course will provide the students with the opportunity to use various art materials and techniques to make art objects. Films and examples will be shown and demonstrations will be given by the instructor when new ways of working are introduced.
- HU120 Introduction to Art (2,1,2) Prerequisites: None**
This course provides the student who has very little background in art with the basic information about color, design, composition, and the use of art materials and techniques needed for the courses in drawing, painting, and ceramics.
- HU121 Sketching (2,1,1.25) Prerequisites: None**
This is a course in basic free-hand drawing techniques including: shading, perspective and proportions. Students will learn to accurately sketch a variety of three-dimensional forms. Emphasis will be placed on using the sketch as a method of communication.
- HU122 Drawing I (3,1,3) Prerequisites: None**
This course includes instruction in basic drawing techniques including: shading, perspective and the proportions of the human face and figure. Studio work will provide the student with drawing experiences using a variety of subjects and materials.
- HU123 Drawing II (3,1,3) Prerequisites: HU122**
This course provides the student with additional drawing experiences with instruction in portraits, the figure, composition, and developing self-expression.
- HU125 Painting I (3,1,3) Studio, Prerequisites: None**
This course includes basic instruction in color mixing and the techniques of painting with oils or acrylics. Studio work is in the student's chosen medium.
- HU126 Painting II (3,1,3) Studio, Prerequisites: HU125**
This course places emphasis on composition and color theory.
- HU130 Ceramics I (3,1,3) Studio, Prerequisites: None**
This course includes instruction in the basic materials, techniques, and aesthetics of working in clay. Studio work consists of forming, decorating and glazing hand built pottery and sculpture.
- HU131 Ceramics II (3,1,3) Studio, Prerequisites: HU130**
This course places emphasis on further development of hand built forms or learning the basic techniques of throwing on the potter's wheel and exploring different decorating and glazing techniques.

- HU150 Beginning Photography (3,1,2) Prerequisites: None**
This course includes basic instruction in the mechanics of a camera and techniques in the dark room. It is a beginning course intended for people who have never taken a picture in their lives: however, every attempt will be made to allow students who have previous experiences to pursue more advanced objectives. The emphasis will be on establishing a basis of sound technique as a means of getting to the artistic idea.
- HU151 Color Photography (3,2,2) Prerequisites: HU150, or student must have written departmental approval.**
This course is a basic color photography experience. Techniques of film development, color printing, and color balance of color prints will be explored.
- HU185 Special Ensemble I (1,0,1) Prerequisites: None**
These groups are appropriate for musicians who enjoy performing in small select vocal ensembles. Participants will be selected after successfully auditioning with music director. Each ensemble will meet approximately twice a week and the rehearsal schedule will be arranged sometime after the first week of each semester. These ensembles may include women's, men's and /or mixed singing groups.
- HU186 Special Ensemble II (1,0,2) Prerequisites: None**
This course is a continuation of HU185.
- HU191 Choir I (1,0,2) Prerequisites: None**
This course offers the students interested in the performing arts and opportunity to further develop musical talents. The choir performs at several campus and community events throughout the academic year. Opportunity is also provided to perform with small vocal ensembles whose members are selected from choir personnel.
- HU192 Choir II (1,0,2) Prerequisites: None**
This course is a continuation of HU191.
- HU195 Jazz Band I (1,0,2) Prerequisites: None**
This group is made up of instrumentals having previous band experience. The class offers instrumental musicians the opportunity to continue their education on their particular instrument in the jazz medium. The jazz band performs at several campus and community events throughout the academic year.
- HU196 Jazz Band II (1,0,2) Prerequisites: None**
This course is a continuation of HU195.
- HU200 Humanities I (4,4,0) Prerequisites: None**
The purpose of this course is to develop the student's understanding of the artistic, literary and philosophical nature of man. Viewed historically, selected topics integrate material from the fields of art, literature, music, philosophy and religion.

- HU201 Humanities II (4,4,0) Prerequisites: None**
This course is a continuation of HU200. Completion of HU200 before enrolling in HU201 is recommended but not required. Humanities II places emphasis on the modern historical development of thought in art, literature, music, philosophy, and religion.
- HU220 Introduction to Philosophy (3,3,0) Prerequisites: None**
This course is designed to acquaint the student with some fundamental questions concerning the nature of man and the way in which the most profound thinkers of the past and present have dealt with those questions. Though not a prerequisite, the completion of HU200 before enrolling in Introduction to Philosophy is strongly recommended.
- HU222 Bioethics (3,3,0) Prerequisites: None**
This course is designed for the study of some of the major ethical theories and their relevance to the decision-making process in the biologically or health-care related fields. Topics to be included in this course are issues related to: 1) conception/birth, 2) life/death, and 3) patient's or individual's rights, etc.
- HU225 Art for the Elementary Teacher-Lecture and Studio (2,1,2)**
Prerequisites: None
This course combines instruction in the practice and philosophy of teaching arts and crafts to children, with studio work in a variety of materials and techniques suitable for their use.
- HU227 Painting III (3,1,3) Studio, Prerequisites: HU126**
This course places emphasis on exploration of traditional or experimental painting techniques.
- HU228 Painting IV (3,1,3) Studio, Prerequisites: HU227**
This course places emphasis on development of individual expression.
- HU230 Watercolor Painting (2,.5,1.5) Prerequisites: None**
This course includes basic instruction in color mixing and the techniques of painting with watercolor.
- HU232 Ceramics III (3,1,3) Studio, Prerequisites: HU131**
- HU233 Ceramics IV (3,1,3) Studio, Prerequisites: HU232**
- HU240 American Art Seminar (1,0,1) Prerequisites: None**
In this course, students will read and report orally on major American Artists and movements. The artists' works will be examined critically in class. Subsequent class discussions will explore the derivations, significances, meaning, and trends evident in their artistic expressions.
- HU241 American Art Seminar II (1,1,0) Prerequisites: None**
In this course students will read and report orally on major American artists and movements of the Twentieth Century. The artists' works will be examined critically in class. Subsequent class discussions will explore the significances, meanings, and trends evident in their artistic expressions.

- HU245** French Impressionism (1,1,0) Prerequisites: None
This course offers an opportunity to explore the artists, techniques, and environments of the Impressionist movement in painting. It took place in France, one hundred years ago, and is one of the most beautiful and popular periods in art history.
- HU287** Special Ensemble III (1,0,2) Prerequisites: HU185
This course is a continuation of HU186.
- HU288** Special Ensemble IV (1,0,2) Prerequisites: HU186
- HU293** Choir III (1,0,2) Prerequisites: HU191
This course is a continuation of HU192.
- HU294** Choir IV (1,0,2) Prerequisites: HU192
This course is a continuation of HU293.
- HU297** Jazz Band III (1,0,2) Prerequisites: HU195
This course is a continuation of HU196.
- HU298** Jazz Band IV (1,0,2) Prerequisites: HU196
This course is a continuation of HU297.

INDUSTRIAL TECHNOLOGY

- IT100 Machine Tool Theory (2,2.25,0)** Prerequisites: Student Must Have Written Departmental Approval.
This is a lecture course consisting of the definition, history, operation and application of the various tool room machines. Emphasis is placed on specific and special operations such as threading, taper turning, indexing, electro-chemical machining, and cutting tool geometry. Other non-traditional machining will be mentioned. The machinist handbook will be reviewed and used throughout the course as a reference for information needed in the operation of machine tools.
- IT102 Basic CNC Operation (2,2.25,0)** Prerequisites: Student Must Have Written Departmental Approval.
This course provides a hands-on experience in programming Computer Numerical Control systems used with machine tools. Topics covered include: circular and linear interpolation, absolute programming, Preparatory (G) and Miscellaneous (M) functions. Students will write their own programs and transfer them from the computer to the CNC machine and make the parts.
- IT104 Statistical Process Control (1,1,0)** Prerequisites: None
Commonly known as SPC, this course will include a brief history of SPC; a few of the statistical concepts which support it; an explanation of why it works; and why it is becoming more popular. Emphasis will be given to sampling methods, control charts, case studies, and tips for getting SPC started in the plant environment.
- IT105 Statistical Problem Solving (1,1,0)** Prerequisites: IT104, Or Student Must Have Written Departmental Approval
This course will include a brief refresher on the basic statistical concepts learned in IT104; a more indepth explanation of the relationship between process variation and process problems; includes advanced application toward a better understanding of machine and process capability in terms of improvement through reductions in the common causes of variation. Emphasis will be applied to problem-solving techniques for correcting process nonconformities.
- IT121 Plastic Injection Molding (2,2,0)** Prerequisites: None
A new course under development at press time. Lecture/demonstration on processes, machines, and materials used in modern injection molding companies. Students will personally experience set-up and operational challenges.
- IT130 Metallurgy and Heat Treatment (2,2.25,0)** Prerequisites: None
Studied in this course are properties of metals and the tests to determine their use, chemical metallurgy, producing iron and steel, physical metallurgy, shaping and forming of metals, properties and non-ferrous alloys, study of properties of steel, surface treatments, powder metallurgy, and classifications of steels. Stress, strain, and strength of materials will be included throughout the course.

- IT155 Safety and First Aid (2,2.25,0) Prerequisites: None**
This course covers basic industrial safety practices, and includes samples of lessons learned the hard way. Personal and plant safety topics include: fire, electrical, moving machinery, lifting, vision and hearing, and overhead work. An eight hour basic first-aid section is taught by a certified Red Cross instructor, and successful students are eligible for Red Cross Certification.
- IT220 Basic Machine Operations (3,2,2) Prerequisites: None**
This course covers the theory and practice in the operation of typical machine tools as well as the use of bench tools and layout equipment. The course is designed to provide practical knowledge of machine processes rather than machine shop skill.
- IT221 Advanced Machine Operations (3,2,2) Prerequisites: IT220**
This course covers advanced operations on grinders, mills, presses and lathes. Students will set up and perform machining operations using typical machine shop equipment. They will be assigned special projects to insure a full understanding of the operation of this equipment.
- IT253 Hydraulics and Fluid Mechanics (3,2,2) Prerequisites: None**
This course includes applied physics, hydraulic principles and formulas, fluid characteristics and basic circuits and theory. In practice the units of the hydraulic system are disassembled, inspected, and tested. The piping, tubing, hose and common trouble sources in hydraulic systems are covered through laboratory demonstrations and experiments on specialized fluid power equipment.
- IT260 Manufacturing Processes (2,2,0) Prerequisites: None**
This is a study of the modern methods and processes used in manufacturing a product. Individual and group tours of industry, viewing several video tapes, and a survey of technical literature comprise the basis for this course.
- IT270 Industrial Quality Control (2,2.25,0) Prerequisites: None**
This course defines the changing quality concepts of modern-day industry; further defines quality organization, quality costs, data collection, process control, customer relations, and product reliability. Encompasses theory and practical application of Statistical Process Control (SPC).

LANGUAGE ARTS

- LA100 Freshman English I (3,3,0) Prerequisites: None**
This course introduces the student to the nature and function of the English language. The successful student will attain a basic competency in oral and written communication.
- LA101 Freshman English II (3,3,0) Prerequisites: LA100, or student must have written departmental approval**
This course is to develop the student's ability to analyze the various processes or formal and informal communication and to improve the ability to recognize and utilize effective argumentative and expository prose.
- LA160 Journalism (3,3,0) Prerequisites: None**
This is an introduction course which includes the basic techniques in writing, the principles of effective news writing, a survey of newsroom organization and practical experience provided through laboratory sessions. (Normally offered only at the prison extensions.)
- LA161 Journalism Lab I (1,0,2) Prerequisites: None**
This course provides practical experience on a newspaper.
- LA162 Journalism Lab II (1,0,2) Prerequisites: None**
Advanced practical experience on a newspaper.
- LA200 American Thought and Literature I (3,3,0) Prerequisites: None**
This course introduces the student to American literature through the "thematic" approach. The student, while required to know the traditional historical framework, actually reads modern literature as well as the older literature, guiding his/her reading according to the recurring themes, problems, and "continuing causes" which have concerned Americans from the beginning to the present day.
- LA201 American Thought and Literature II (3,3,0) Prerequisites: None**
This is a survey of American literature arranged according to thematic concerns (recurring themes, problems, "causes"), and which emphasizes writing of the twentieth century.
- LA210 Speech (3,2,1) Prerequisites: None**
This is an introductory course in public speaking, designed mainly to provide practice in speaking with interest and purpose before an audience. Through presenting a series of brief talks before peers, the student will become familiar with the basic principles of speech organization, preparation, and delivery.
- LA212 Oral Interpretation (3,2,1) Prerequisites: None**
Through analyzing and reading aloud selected prose, poetry, and drama, the students will improve their own understanding of these works and increase their ability to communicate with others. The course will relate interpretative reading to the other areas of speech: public address, television, theater, speech improvement, and the teaching of literature.

- LA220 English Literature from the Beginning to 1798 (3,3,0)** Prerequisites: None
This is a systematic study of English literature which stresses the principal authors and their works. Reading and discussion will include representative writings of the period from the beginning to the end of the eighteenth century and will also survey current critical approaches.
- LA221 English Literature from 1798 to Present (3,3,0)** Prerequisites: None
This is a systematic study of English literature which emphasizes the principal authors of the nineteenth and twentieth centuries. Readings and discussion will include representative works and will also review current critical attitudes.
- LA230 Short Story (3,3,0)** Prerequisites: Student must have written departmental approval
This is a study of the strengths and limitations of the short story, which the student learns to read with delight and understanding.
- LA235 Children's Literature (3,3,0)** Prerequisites: None
This is a survey of literature for children in the elementary grade, aimed at developing techniques for using books with children, storytelling, and the criteria for book selection.
- LA236 Children's literature-Fairy Tales (1,1,0)** Prerequisites: None
This course includes the examination of patterns in a variety of traditional fairy tales and a close look at the world's best known fairy tale, Cinderella. Students will also examine and debate conflicting theories about the value and function of fairy tales.
- LA240 The Novel (3,3,0)** Prerequisites: None
This is a study of the novel with dual intent: to increase the benefits one receives from reading through systematic discussion of each novel; and to better understand how the "more than casual" reader approaches fiction through study of the several schools of literary criticism.
- LA250 Creative Writing (3,1,2)** Prerequisites: None
The purpose of this course is to allow the students to sharpen their ability to use the English language in expressing creative thought in any or all of the traditional genres. The student will be encouraged to greater achievement in types of writing they have already tried and will be expected to attempt work in new areas. A workshop atmosphere with common exchange of ideas will prevail.
- LA260 Drama (3,3,0)** Prerequisites: None
This course is an introduction to drama as a literary form and requires the student to read representative writings of the period from classical times to present.
- LA261 Drama--As a Performing Art (3,1,2)** Prerequisites: None
Students are involved in the producing, acting, staging, and directing of plays.
- LA270 Poetry (3,3,0)** Prerequisites: None
This course compares contemporary and classic examples of poetry to historically durable examples of structure and content.

LA280 A Survey of Black American Literature (3,3,0) Prerequisites: None

This is a chronological survey of Black American writing from 1760 to the present with emphasis on twentieth century examples of poetry, fiction, drama, and autobiography.

MATHEMATICS

- MA100 Elementary Algebra (3,3,0)** Prerequisites: None
This course is a review of the properties of the basic number systems, using the tools of beginning algebra. Additional topics include first degree equations and inequalities, special products and factoring, graphs and linear systems, radicals and quadratic equations.
- MA102 Trigonometry (3,3,0)** Prerequisites: MA104, or the student must have written departmental approval
The right triangle is studied to introduce the students to the trigonometric functions. Further topics include trigonometric identities, additional formulas, law of sines, law of cosines, complex numbers and DeMoivre's Theorem.
- MA104 Intermediate Algebra (3,3,0)** Prerequisites: MA100
This course will provide students with the algebraic skills, including manipulation and proofs, necessary for the study of college algebra and analytic geometry. Topics covered include the usual topics through quadratics plus the exponential and logarithmic functions, the binomial theorem, sequences, systems of equations, complex numbers, permutations and combinations with an introduction to probability.
- MA110 Shop Mathematics I (2 credit hours, 36 clock hours)** Prerequisites: None
This course covers the arithmetic of common fractions, decimals, percents, square roots, and the use of simple formulas. Also, the use of metrics is introduced.
- MA111 Shop Mathematics II (2 credit hours, 36 clock hours)** Prerequisites: MA110
Algebraic manipulations necessary for the solving of formulas and applied geometry, geometric constructions and applications, metrics and the use of the calculator are covered in this course.
- MA112 Shop Mathematics III (2 credit hours, 36 clock hours)** Prerequisites: MA111
Solid geometric applications, shop trigonometry, and an introduction to the use of computers in design and machining are covered.
- MA116 Managerial Mathematics (3,3,0)** Prerequisites: MA104
This is a study of mathematics relating to various business situations involving matrix algebra, sets probability, linear programming and statistics.
- MA151 Math for Elementary Teachers (3,3,0)** Prerequisites: MA100
This course will provide the elementary teacher with the necessary background to teach mathematics in the elementary school. Such subjects as the origin of systems of numeration, sets, systems of whole numbers, bases other than ten, systems of integers, rational and real numbers will be discussed.
- MA159 College Algebra (3,3,0)** Prerequisites: MA102
Topics include the quadratic equation in two variables, sequences and series, complex numbers, DeMoivre's theorem, synthetic division, mathematical induction, matrices, combinations and permutations.

MA160 Analytic Geometry (3,3,0) Prerequisites: MA159

This course covers the straight line, the circle conics, algebraic curves, transcendental curves, parametric equations, planes and lines, and quadratic surfaces.

MA190 Elementary Statistics (3,3,0) Prerequisites: Student must have departmental approval

This course introduces students to basic statistical techniques. Topics studied include: mean, standard deviation, frequency, probability, binomial distribution, the normal curve, sample means, confidence limits, hypothesis testing, chi-square, linear correlation and regression. Each topic is introduced with examples and problems. Practice in the use of appropriate tables will be sufficient to insure confidence in their use.

MA250 Calculus I (4,4,0) Prerequisites: MA160

This course covers functions and continuity, limits differentiation, applications, integration, and the definite integral applications.

MA251 Calculus II (4,4,0) Prerequisites: MA250

This course covers logarithms and exponentials, arc length, polynomials, partial fractions, Taylor's series, special methods of integration, and partial differentiation.

NATURAL SCIENCES

NS100 Biological Science (4,3,2) Prerequisites: None

This course provides a basic general education in some major biological sciences (botany, ecology, genetics, and zoology) and also a basis for the individual to relate to his total environment. It presents an opportunity for the student to evaluate his own interest and potential in the biological sciences.

NS101 Physical Science (4,3,2) Prerequisites: None

The purpose of this course is to provide basic general education in the physical science areas of physics and chemistry so that the student will be better able to understand and evaluate the results of scientific and technological achievement and their impact upon society. It also provides a basis for the student to evaluate his own interest and potential in the physical sciences.

The science department recommends that students who have weak high school science backgrounds or who have been out of school for several years should take NS100-101 sequence before enrolling in any other college science classes. Other students should select from the biological and physical science courses listed below in order to fulfill the science requirements at Montcalm Community College.

NS102 Physical Geography/Earth Science (3,3,0) Prerequisites: Student must have written departmental approval

A study of the earth-sun relationship, climatic factors on the earth, the geographic grid, land forms, rocks, and minerals. Opportunity will also be provided to gain skills in map reading. The course will also include the study of the earth's natural resources and man's impact on these resources.

NS103 Anatomy and Physiology I (4,3,2) Prerequisites: NS100, or the student must have written departmental approval

This course introduces the structural organizations and gross functional roles of the major components of the human body. The concept of the dependence of one system on another and the contribution of each system to the total well-being of the individual will be emphasized. Lab includes some dissection and basic physiology experiments.

NS105 Introductory Chemistry (4,3,2) Prerequisites: None

This course is for students entering nursing, dental hygiene, home economics, other allied health science fields and for non-science majors. Students will become familiar with basic principles of chemistry as applied to the health sciences and with nuclear, organic and biochemistry. (Students working toward a bachelor's degree should take the two-semester college chemistry course--NS220-NS221.)

NS108 Problem-Solving (3,3,0) Prerequisites: None

This course in general problem-solving skills deals with the techniques used in solving a variety of problems that occur in all aspects of college courses and in all walks of life. This is an elementary course which assumes non-prior knowledge beyond basic reading, writing, and arithmetic skills.

- NS110 Botany (4,3,2) Prerequisites: NS100**
This is a survey of the plant kingdom from the simplest to the more complex. Students will study plant structure, classification, and ecological relationships. Students will have an opportunity to submit a collection from the local flora and special attention will be given to taxonomic principles and collection procedures along with the use of keys. The major portion of class time is spent out-of-doors.
- NS111 Introduction to College Physics I (3,2,2) Prerequisites: MA100**
This is a study of the physical concepts of force, work, rate, and resistance as they apply to several forms of energy.
- NS112 Introduction to College Physics II (3,2,2) Prerequisites: NS111**
This is a study of the physical concepts of power, potential and kinetic energy, energy converters, vibrations, and waves as they apply to several forms of energy.
- NS115 Zoology (4,3,3) Prerequisites: NS100**
This is a general survey of the animal kingdom including comparative studies of the structure, function, and behavior of representatives of animal groups. Laboratory work includes dissection of representative animals from each phylum.
- NS201 Microbiology (4,3,2) Prerequisites: NS100, NS101, or the student must have written departmental approval**
This is a study of the biology of various micro-organisms, including viruses, bacteria, fungi, algae, and protozoa. The interactions of certain pathogenic micro-organisms and their animal, human and plant hosts are studied as well as microbial ecological relationships in general.
- NS203 Anatomy and Physiology II (4,3,2) Prerequisites: NS103, NS105, or the student must have written departmental approval**
This is a study of cellular anatomy and physiology of the major body systems in more detail than NS103. Topics include basic chemistry, metabolism, an expanded discussion of renal function, fluid and electrolyte balance, acid-base balance, the immune system and stress. It includes more clinical applications. Lab includes more extensive physiology and dissection experiments.
- NS208 Nature Study (4,2,3) Prerequisites: None**
This is a field course which provides students with a background of information enabling them to go into the out-of-doors with a degree of confidence knowing they will be able to recognize and know something about many of the common plants and animals found in the local area. The laboratory used is the out-of-doors and the purpose of the course is to aid students to better understand the environment in which they find themselves.
- NS220 College Chemistry I (4,4,3) Prerequisites: NS101, or the student must have written departmental approval**
Fundamental theories, principles, and problems of chemistry will be emphasized.

NS221 College Chemistry II (4,4,3) Prerequisites: NS220

This course is a continuation of NS220. Organic chemistry and biochemistry will be introduced and the last five weeks will cover qualitative analysis.

NS230 Introductory Physics I (4,3,2) Prerequisites: Student must have written departmental approval

This course is for students interested in the life sciences, e.g. biology, medical technology, pre-medicine, pre-dentistry, etc. The course covers concepts of light, force and motion, and energy as they apply to biological mechanism and instrumentation.

NS231 Introductory Physics II (4,3,2) Prerequisites: NS230

This course is a continuation of NS230 and covers fluids, elasticity of matter and membranes, sound, electromagnetism, quantum theory, and radioactivity.

NURSING

NUR100 Nursing Skills I (4,3,2) Prerequisites: None

NUR100 is a 4 credit hour course designed to provide the student with the information and skills necessary to build a foundation for efficient bedside nursing. Students will not only gain skill in the basic nursing procedures they are to perform but also increase their ability to utilize the nursing process in meeting the basic needs of patients and improve communication skills with both patients and members of the health team.

NUR101 Nursing Skills II (2,1,2) Prerequisites: None

NUR101 is a 2 credit hour course designed to assist the student to perform sterile procedures, administer first aid, assist the doctor with technical procedures, administer medications, and develop expertise in utilizing the nursing process.

NUR110 Food in Health and Disease (2,2,0) Prerequisites: None

Basic nutrition facts are presented with their relationship to health. The student becomes familiar with food nutrients, good nutrition, and variations of diet therapy.

NUR115 Clinical Practicum I (3,0,9) Prerequisites: None

Clinical experience is provided so the student can apply the basic knowledge and skills essential to basic bedside care in the actual practice setting. Student assignments, supervision, and evaluation are carried out by the instructor, and the student is expected to begin the process of applying classroom theory to meet the basic needs of the patients. This course includes five weeks of simulated lab demonstration experience, and eleven weeks of actual clinical experience.

NUR116 Clinical Practicum II (10,0,20) Prerequisites: NUR115

Clinical experience is provided to further the development of the student in nursing. As advanced procedures are learned, the student will have the opportunity to perform them in the hospital setting. Skills which require use of sterile technique and assisting with more technical procedures will be emphasized. To develop a concept of the total nursing process, assessment, planning and implementing total care, will be the goal. Students will be assigned the care of geriatric, pediatric, medical, surgical, obstetrical, and CCU-ICU patients.

NUR117 Clinical Practicum III (6,0,12) Prerequisites: NUR115, NUR116

This course is the final clinical course in Level I of the nursing program. The student will draw from previous clinical experience in applying the nursing process. Each student will participate in the total process of administration of drugs to patients.

NUR120 Concepts of Interpersonal Relationships (2,2,0) Prerequisites: None

The person as a nurse is studied in this course to help students identify and meet emotional needs. At the completion of this course, the student will be able to identify basic dynamics of human behavior and differentiate among patterns of behavior. The correlation between physical and emotional needs is considered as a factor in planning patient care in conjunction with other health team members.

- NUR125 Nursing Seminar (1,1,0) Prerequisites: None**
Current trends in nursing related to education, nurse practice acts, and professional organizations will be the focus of this course.
- NUR145 Maternal-Child Nursing I (3,3,0) Prerequisites: None**
This course is a study of the psychologic and physiologic basis of maternity care. The client and her significant others' needs for support during ante, intra, and post partum periods are emphasized. Parental-infant bonding and education for childbirth and parenting are stressed topics. Complications during pregnancy and in the newborn period are related to the processes underlying these problems. The class also includes the study of health care problems of children, the proper assessment for each, and the identification of appropriate nursing measures.
- NUR150 Introduction to Medical-Surgical Nursing (2,2,0) Prerequisites: None**
This introductory course in medical-surgical nursing presents the causes and effects of disease, body defenses, and prevention of disease. Common specific, long-term illnesses are discussed, with appropriate nursing actions.
- NUR151 Medical-Surgical Nursing II (3,3,0) Prerequisites: None**
This course presents the more common medical and surgical conditions, and the treatment involved in providing nursing care. The course is intended to present the concept of assessing and meeting the total needs of the patient including the patients return to normal functional life.
- NUR152 Medical-Surgical Nursing III (1,1,0) Prerequisites: None**
A continuation and review of the previous Medical-Surgical Nursing courses.
- NUR160 Pharmacology (2,2,0) Prerequisites: None**
This course offers instruction in pharmacology and safety factors essential to dosages and drug administration. Upon completion of the course, the graduate will be able to participate appropriately in the total process involved in the administration of a drug to a patient, including preparing, observing, recording, and reporting the effects of the drug.
- NUR200 Role Transition (2,2,0) Prerequisites: Admission to the second year of the nursing program**
This course is designed to facilitate the student's adaptation to the associate degree nurse role. The focus will be utilization of the nursing process. Advanced standing students entering Level II will have an opportunity to update nursing skills.
- NUR225 Leadership Role in Nursing (3,1,4) Prerequisites: None**
This course was designed to assist the student, within the framework of the nursing process, to develop professional leadership skills, to delegate appropriate tasks to others, to set priorities in nursing practice, and to further develop independent accountability.

NUR245 Maternal-Child Nursing II (6,2,8) Prerequisites: None

This course is a study in more detail than NUR145 of the physiologic and psychologic bases of maternity care. Parental-infant bonding and education for childbirth and parenting continue to be stressed. The high-risk mother and infant problems with necessary treatments, including nursing care, are presented. Embryology and genetic problems are considered.

NUR251 Advanced Medical-Surgical Nursing (10,4,12) Prerequisites: None

Using the nursing process in giving care to adults who are acutely ill or have multiple health problems is the focus of this lecture/clinical course. Nursing intervention in assisting the client and family in their holistic adaptive responses to illness and stress is discussed. Emphasis is placed on the nurse's role in disease prevention, health maintenance, and teaching. Information is designed to build upon the theory learned in all other prerequisite courses and will enable the student to apply previously learned knowledge and skills.

NUR255 Community Mental Health (6,2,8) Prerequisites: SS220

This course will introduce the student to man's psycho-social adaptation to stressors in his environment. Recent developments in treatment methods, such as family therapy, behavior modifications, reality orientation, will be presented. The nurse, using nursing process to work with clients with varying degrees of dysfunction in a wide variety of settings, will be discussed. She/he will work with clients in a mental health center, day care center, substance abuse center, and/or a hospital setting. The content is focused on helping the student enhance her/his understanding of human behavior during both sickness and health, and to acquire skill in interpersonal relationships.

PN281 Basic Concepts of Pharmacology and the Administration of Medicine (4,4,2) Prerequisites: None (Open to Licensed Practical Nurses or those who are eligible to write licensure exam.)

This course offers advanced instruction in the field of pharmacology and safety factors essential to dosage and drug administration. The course is offered with the approval of the National Association for Practical Nurse Education and Service, Inc. (NAPNES). The student must take a Pharmacology test and achieve on this national final test a specified percentile to be issued a certificate from NAPNES. Thirty-two (32) hours of supervised clinical practicum will be arranged with the student's employer* so that practical application of classroom instruction will be experienced (66 contact hours of instruction, 32 clock hours of clinical practicum arranged).

*Students must be employed to fulfill the requirements of this course.

OFFICE EDUCATION

- OE100 Beginning Typing (3,2,2) Prerequisites: None**
This is an introduction to and a mastery of the typewriter keyboard. Personal and business letters, elementary tabulation, simple outlines, and manuscript writing are included.
- OE101 Intermediate Typing (3,0,4) Prerequisites: OE100**
This is a course in the writing of business letters with practice in proofreading, tabulation, special communication forms, reports, and application/employment procedures. Open-lab course.
- OE102 Machine Shorthand (4,3,2) Prerequisites: OE100**
This is a course which introduces the theory and operation of the Stenograph Shorthand Machine. This course is designed to develop a knowledge of stenographs, computer-compatible theory, machine dexterity, fluent reading ability and the ability to take dictation.
- OE103 Shorthand I (4,4,1) Prerequisites: OE100**
A course in the elementary principles of Gregg Shorthand
- OE104 Shorthand II (4,3,2) Prerequisites: OE100, OE103**
Intensive training in theory of shorthand, the development of shorthand outlines, and the ability to take new-matter dictation.
- OE120 Business Mathematics (3,3,0) Prerequisites: None**
This course reviews fundamental arithmetic processes and their business and consumer applications, and includes cash and trade discounts, markups, depreciation, inventory, valuation, interest calculations, payroll deduction, metric system, statistics, and probability.
- OE129 Business Communications I (3,3,0) Prerequisites: OE100**
The basic communications skills are developed through a review of language structure. Attention is given to grammar, English for business use, vocabulary, punctuation, capitalization, and numbers.
- OE130 Business Communications II (3,3,0) Prerequisites: OE100, OE129**
This is a study of effective correspondence in business.
- OE175 Records Management (3,0,4) Prerequisites: OE100**
This course presents the principles of the alphabetic, numeric, geographic, and subject systems of records management, as well as records maintenance, decision-making, and career opportunities in the field of records management. Open-lab course.
- OE202 Advanced Typing (3,0,4) Prerequisites: OE101**
This course presents continued speed-building techniques, advanced production typewriting techniques, skill in business letters, tabulations, manuscript writing, legal documents, and business forms. Open-lab course.
- OE203 Advanced Shorthand (4,0,4) Prerequisites: OE101, OE104**
Further development of the ability to write new-matter dictation with increasing emphasis on speed and accuracy in transcription. Open-lab course.

- OE205 Legal Terminology and Transcription (3,0,4)** Prerequisites: OE101, OE220¹
 This is a study of legal terminology as transcription skills are developed. This course will help the student develop a marketable skill in the use of office transcribing machines. Client and court documents will be prepared. Open-lab course.
- OE206 Legal Office Procedures (3,0,4)** Prerequisites: OE101, OE205
 This is a study of medical terminology as transcription skills are developed. This course will help the student develop a marketable skill in the use of office transcribing machines. Case histories, reports, and medical correspondence will be transcribed. Open-lab course.
- OE207 Medical Terminology (3,0,4)** Prerequisites: None
 This is a study of medical terminology, which is designed to assist the beginning medical secretarial student master medical terms. With an understanding of basic terms, the student can proceed to functional vocabulary while pursuing a career specialty. Open-lab course.
- OE208 Medical Office Procedures (3,0,4)** Prerequisites: OE101, OE207
 This is a course covering the duties of the medical secretary which involves bookkeeping, insurance, medical ethics, legal responsibilities, scheduling and record keeping. In addition, the student will develop a marketable skill in the use of office transcribing machines. Case histories, reports, and medical correspondence will be transcribed. Open-lab course.
- OE220 Voice Transcription (3,0,4)** Prerequisites: OE101, OE202
 Development of transcription skill is stressed with the operation of cassette-tape transcribers. Emphasis is placed on typing skills, the correct use of grammar and punctuation, and building efficient transcription skills. Open-lab course.
- OE225 Word Processing I (4,4,1)** Prerequisites: OE101
 This is a lecture course which introduces basic concepts, terminology, and the emergence of information processing into the modern office. Spelling, grammar, punctuation, and vocabulary, are drawn together in practical application on the IBM-compatible microcomputers. New career paths, which have emerged as a result of information processing, are also covered.
- OE226 Word Processing II (3,0,4)** Prerequisites: OE101, OE225, (OE220)²
 Development of increased keyboarding skills on the Lanier word processors and Apple microcomputers are emphasized in this open-lab course. Students are introduced to word processing simulation procedures through handwritten, rough-draft, and dictated documents. Open-lab course.
- OE227 Word Processing III (3,0,4)** Prerequisites: OE101, OE225, (OE220)²
 Advanced-level concepts and varied office simulations are stressed in this course. In addition to developing machine competency on the NBI shared logic word processor and IBM microcomputers, students develop the skill of dictating using cassette dictation equipment. Open-lab course.

OE230 Office Procedures (3,3,1) Prerequisites: OE101

This is a course in which subject matter and skill development are drawn together in practical application. The following concepts are stressed: telephone techniques, editing, composing, processing mail, filing reprographics, information processing, travel, communications, interviewing, and career paths in the modern office.

OE240 Business Calculators (3,0,4) Prerequisites: OE120 (C)

This is an introductory course in the operation of the electronic display and electronic printing calculators. The instruction applies the basic functions of the machines with practical applications to business problems.

OE290 Field Experience (3,0,6) Prerequisites: OE206, OE208, OE230

This is a course consisting of a carefully planned cooperative work experience in the office. To receive credit for the course, the student must meet the following requirements: (1) complete approved work experience arranged by the instructor, (2) show evidence of satisfactory progress through employer reports and instructor visitations at the office site, and (3) complete a minimum of 96 clock hours during the semester. (Permission of instructor required.)

- PE122 Beginning Skiing (1,0,2) Prerequisites: None**
This course teaches the basic ski maneuvers. Students will be instructed through wide-stance parallel turns. This course includes information on ski maintenance and waxing, a study of different types of skis and bindings and offers a basic knowledge of ski equipment.
- PE123 Intermediate Skiing (1,0,2) Prerequisites: None**
This course includes all intermediate ski maneuvers with special emphasis on parallel skiing plus an introduction to ski racing, including a study of different types of courses with styles. Ski maintenance and technical information on skis and bindings will be studied also.
- PE124 Advanced Skiing (1,0,2) Prerequisites: None**
This course teaches the fundamentals of ski instruction and advanced ski techniques. This course will consist of the theory of ski mechanics, theory of teaching skiing; theory of basic ski maneuvers, practice teaching and advanced ski techniques.
- PE130 Beginning Swimming (1,0,2) Prerequisites: None**
This course will cover the backstroke, breaststroke, butterfly, sidestroke, crawl and human stroke. The course will also include safety, rescue and drownproofing.
- PE131 Intermediate Swimming (1,0,2) Prerequisites: PE130**
This course is designed to improve the swimmer's skill in the basic swimming strokes. Water safety, diving, water games, and elementary teaching techniques will also be covered.
- PE133 Advanced Lifesaving and Water Safety (1,0,2) Prerequisites: PE130, PE131**
This course will train the student to work as a lifeguard in those situations where a Red Cross Advanced Lifesaving and Water Safety certificate is required.
- PE134 Water Safety Instructors Certification (1,0,2) Prerequisites: PE131, PE133**
This course will train the student to work as a Red Cross certified swimming instructor. Basic stroke evaluation as well as teaching techniques and water safety will be covered.
- PE135 Skin and Scuba Diving (2,1,2) Prerequisites: None**
This course teaches the student those skills needed to become a safe scuba diver. Students successfully completing the course will be encouraged to take certification tests.
- PE205 Emergency Health Care (2,2,0) Prerequisites: None**
This course covers first aid for wounds, shock, burns, poisoning, etc., as well as CPR. Students successfully completing the course will qualify for the Red Cross Standard First Aid certification.
- PE231 Swimming Fitness (1,0,2) Prerequisites: PE131 or student must have written departmental approval**
This course will provide the student with the knowledge and guidance to improve health and physical fitness through exercise and training in a swimming program. This conditioning course will cover the advantages and benefits of swimming; principles of training, evaluation and motivation; minor health annoyances and stroke mechanics.

STUDENT DEVELOPMENT

- SD100 Human Potential (1,0,1) Prerequisites: None**
Attention will be given to increasing personal acceptance and understanding of self and others through structured small group activities.
- SD108 Problem Solving (3,3,0) Prerequisites: None**
A course in general problem-solving skills. The techniques used in solving a variety of problems that occur in all aspects of college courses and in all walks of life will be covered. This is an elementary course which assumes no prior knowledge beyond basic reading, writing, and arithmetic skills.
- SD110 Career Development (1,0,1) Prerequisites: None**
This is an overview of career/life style planning. Values, skills, interviews, occupational information, resumes, interest inventories, decision making and placement are topics that are covered in this course.
- SD120 Dealing with Stress (1,0,1) Prerequisites: None**
This course is designed to introduce the student to the topic of stress and how it affects behavior and to help the student identify alternative methods of dealing with stress.
- SD130 Women's Awareness (1,0,1) Prerequisites: None**
This course is designed to offer women new skills for improving self-awareness and understanding and to increase their ability to plan and set goals. Such topics as women in history, stereotyping in our society, career options and family relationships will be discussed.
- SD140 Reading for Fun and Profit (1,0,1) Prerequisites: None**
This course is designed to help students develop a keener appreciation of reading: (1) for fun--leisure time activity which is not only entertaining, but also thought provoking; and, (2) for profit--activity that can help one develop a fuller personality, grow intellectually, become more aware of the world and one's place in it, and enhance one's self worth and one's value to others in society. Students study a selection of reading material and meet periodically with each other and the instructor to discuss, interpret, and evaluate that material.
- SD145 Keyboarding (1,0,2) Prerequisites: None**
This course is an introduction to the computer keyboard. The concept of typing the alphabet, numbers, and symbols by touch is stressed. Open-lab course.
- SD150 Developmental Reading I (1,0,1) Prerequisites: None**
The purpose of this course is to assist students in the development and improvement of reading skills. In a lab format, students will receive testing to identify reading skill levels, programmed materials to improve reading skill levels and individual assistance from a reading specialist as needed. A grade of "S" (satisfactory) will be used to indicate satisfactory completion of the course.

- SD151 Developmental Reading II (1,0,1) Prerequisites: None**
This course is designed for students who have successfully completed SD150 and wish to develop more sophisticated reading skills.
- SD152 Developmental Reading III (1,0,1) Prerequisites: None**
This course is designed for students who have successfully completed SD151 and wish to develop more sophisticated reading skills.
- SD153 Developmental Reading IV (1,0,1) Prerequisites: None**
This course is designed for students who have successfully completed SD152 and wish to develop more sophisticated reading skills.
- SD156 Efficient Study (2,2,0) Prerequisites: None**
For the student seeking a thorough review of the principles of efficient study, this course provides instruction and practice in textbook study, note-taking, test-taking, study environment and memory techniques.
- SD158 Efficient Reading (1,0,1) Prerequisites: None**
This course is designed to enable students to develop faster and more flexible reading rates, as well as improve comprehension and vocabulary skills. Basic techniques covered will be reading in thought units, varying rates to purpose, identification of main idea, and relationship patterns, and vocabulary development through use of context. Individual growth in rate and comprehension will be measured by the use of timed pre and post tests.
- SD160 Developmental Mathematics I (1,0,1) Prerequisites: None**
This course is recommended to students not intending to enroll in courses requiring advanced math proficiency, but who wish to develop basic arithmetic skills. Emphasis is placed on computations with whole numbers, fractions, decimals, percentages, and the metric system. In a lab format, students work individually to complete units for which a specific weakness has been diagnosed. A grade of "S" will be used to indicate satisfactory completion of the course.
- SD161 Developmental Mathematics II (1,0,1) Prerequisites: None**
This course is available to students who have successfully completed SD160 and would like to continue developing basic arithmetic skills.
- SD162 Developmental Mathematics III (1,0,10) Prerequisites: None**
This course is recommended to students intending to specialize in business, natural science, mathematics, automotive, secretarial, or nursing programs. In addition to computations with whole numbers, fractions, decimals, percentages, and the metric system, students will receive instruction in consumers applications of basic mathematics, exponential notation, square roots, signed numbers, plane geometry, and solving equations.
- SD163 Developmental Mathematics IV (1,0,1) Prerequisites: None**
This course is available to students who have successfully completed SD162 and would like to continue developing their math skills.

SD170 Basic Writing Skills (2,0,2) Prerequisites: None

This course provides the successful student with the skills necessary to write concise, correctly punctuated sentences using standard English. In a lab format, students learn to write complete sentences utilizing the common sentence patterns employed in English. Major aspects of the course will be: grammar as it relates to punctuation and clarity, spelling, and sentence combining.

SD175 Improving Reading and Writing (3,3,0) Prerequisites: None

This course offers the student an opportunity to improve communication skills in both reading and writing. Throughout the course, the relationship between good writing and reading for comprehension will be stressed. Emphasis will be placed on grammar, sentence structure, vocabulary development, spelling and paragraph construction.

SD250 Travel Seminar (1,1,0) Prerequisites: None

This course provides the student with a chance to learn about a variety of subjects through organized travel experiences to points of interest throughout the world. A group tour will be formed to be conducted by various members of the faculty having expertise in the particular location or topic being investigated.

SOCIAL SCIENCES

- SS110 Introduction to Social Science I (4,4,0) Prerequisites: None**
This course introduces the student to the interdisciplinary approach to the study of society and human behavior. Methodology, the development of skills necessary to study and research in the social sciences, is emphasized. Attention is given to the study of power, its use and distribution, as an overall framework for examining the nature of our society's strengths and weaknesses. Materials will be drawn primarily from economics and political science. Special emphasis will be given to the rights and responsibilities of citizenship and the form and functions of government at the National, State and Local level. (This course will satisfy the State requirement for political science.)
- SS111 Introduction to Social Science II (4,4,0) Prerequisites: None**
This course is a continuation of SS110. (Completion of SS110 or SS101 is recommended before enrolling in SS111, but is not required.) Materials will be drawn from history, anthropology, sociology and psychology as the study of society and human nature continues emphasizing selective aspects of culture and contemporary social problems.
- SS150 Contemporary World Geography (3,3,0) Prerequisites: None**
This course introduces the student to the nature and scope of the field of geography. World regions are studied. Analysis of geographic characteristics of selected regions and the relationship of natural environment, cultural background, economic conditions and world issues to national and regional problems are studied.
- SS215 Principles of Economics (3,3,0) Prerequisites: None**
This is a one-semester survey course in introductory economics. Although this course provides exposure to both macroeconomics and microeconomics, greater attention is given to macroeconomics, which is related to issues of national economic policy. Studies include foundations of economic analysis, the public economy, national income, stabilizations, growth, employment, and taxes.
- SS220 General Psychology (3,3,0) Prerequisites: None**
This course familiarizes the beginning student with the basic concepts and methods used by psychologists to study human behavior. Among the subjects covered are experimental methods, human growth and development, intelligence, perception, learning, motivation and emotion, personality disorder and therapy, and group behavior. Daytime, on-campus sections of this course are taught using a modified Keller Plan approach; other sections follow a more traditional classroom lecture-discussion format.
- SS221 Child Psychology (3,3,0) Prerequisites: None**
Students in this course study psychological theory and experimental findings as they apply to understanding and influencing children's growth and development. Emphasis is placed upon such basic concerns as the effects of heredity and environment, the processes of maturation, intellectual growth and development, and childhood anxiety.

SS230 Sociology (3,3,0) Prerequisites: None

This course familiarizes beginning students with the basic concepts and methods used by sociologists to study society. Among the topics covered are culture, social structure, social class, institutions, demography, deviance, and social change. Emphasis is placed upon acquainting the student with the sociological perspective of human behavior and our modes of social organization.

SS235 Social Problems (3,3,0) Prerequisites: None

Students in this course study the sociological approach to social problems. Subjects covered include mental illness, crime, poverty, family and community disintegration, violence, ecology and current events.

SS240 Political Science (3,3,0) Prerequisites: None

This course is an introduction to politics and government as they operate at the federal level. Although in many ways it is a basic traditional survey sequence in American Government, the course goes by the traditional examinations of government institutions (the executive, the legislature, and judiciary) to explore how the complex web of ideas, groups, personalities, and processes interact with those institutions to arrive at public policy. Within the larger context of the evolution of our present political system and the ongoing debate between liberals and conservatives, we will attempt to discover how the following areas relate to power, influence, and decision-making in American politics: Our political culture; our Federal structure; the Constitution; public opinion, political socialization, campaigns and voting; pressure groups and lobbying; political parties, civil rights and liberties, and international affairs. This course points out problem areas and inequities in development of our lives. This course relies on both historical and contemporary examples, stressing the present-day practice of politics to illustrate and explain the principles and processes outlined above.

SS250 United States History to 1865 (3,3,0) Prerequisites: None

This course will critically examine America's past from the period before the European takeover and domination of the North American continent until the time at which a young, but increasingly powerful United States is ripped apart by Civil War. The conflicts between individualism and collectivism, nationalism and sectionalism, as well as those conflicts between social classes, and between ethnic groups as themes are examined throughout the course. Although attention is given to the rise of our social history, which involves the effort to explore history "from the bottom-up"; through the eyes and everyday experiences of common, working-class people whose preoccupation is not with the Great Events of the day, but with the day-to-day business of living. This course will focus on the following periods in an effort to contribute to the understanding of America's infancy and early youth: American before the European invasion; native American cultures; early settlements; the variety of colonial experience and regional differences; independence, war, and nationhood; the Constitution, territorial expansion and manifest destiny; nationalism and sectionalism, North/South Conflict; and the Lincoln Presidency and the Civil War.

SS251 United States History Since 1865 (3,3,0) Prerequisites: None

This course is a continuation of SS250, with a similar emphasis on social history and the conflicts between individualism and collectivism, between social classes, and between ethnic groups as outlined above, as well as new conflicts between liberals and conservatives, isolationists and imperialists, centralists and localists, that remain with us today. The course focuses on the following periods in our effort to understand the factors that influence America's present behavior: racism, reconstruction, and Jim Crow; involvement; social political and economic reform in the Progressive period; the World Wars; the Depression and the reform of capitalism; the Cold War, and the age of affluence; the turbulent sixties, the self-indulgent seventies and the age of scarcity.

SS255 Michigan History (3,3,0) Prerequisites: None

This course presents the beginning student with a broad overview of the history of the Wolverine State. Several themes (immigration, exploration, technology, mobility, abundance, exploitation) will be explored, especially as they relate to the broader picture of national history--indeed our study of Michigan might serve as a case study of all America. Several important overlapping periods of Michigan history will be examined in detail: from the early French explorations and fur trade, through the British occupation, the logging boom, statehood, growth of commerce and shipping, agricultural development and the Age of the Automobile with the consequent industrialization and growth of the tourist industry. In addition, every effort will be made to focus on local aspects of the state's history, as they relate to themes and periods above.

SS258 Sex in History (3,3,0) Prerequisites: None

This course proposes to examine human sexual behavior in historical context. In that sense the course is an overview of change and continuity in sexual attitudes, norms, and practices in several civilizations, from prehistory to the present day, as well as how they have been reflected in art and literature, both classic and popular. The first section of the course will chronologically explore sexual custom in Greece and Rome, discuss the influence of Christianity, look at China, India and the Arab world, and then focus on Europe and the Americas through the Victorian Age. The second section will involve a more in-depth look at the complex interrelationship between male and female roles in modern America.

SS260 Cultural Anthropology (3,3,0) Prerequisites: None

In this course students will study about different cultures, particularly preliterate ones. Subjects studied will include food-gathering and settlement patterns, status and kinship systems, economic and political organization, religion, language, art, and special concepts and methods used by cultural anthropologists.

TECHNICAL DRAFTING AND DESIGN

- TD100 Technical Drafting (3,1,4) Prerequisites: None**
This laboratory/lecture course includes the knowledge and manipulative skills needed for work with drafting instruments, to create linework, lettering, geometric construction, sketching, multiview projection, sectioning, basic dimensioning, isometric, oblique and perspective projection.
- TD105 Blueprint Reading I (2, .5, 1.75) Prerequisites: None**
This course is a technical blueprint reading course for manufacturing and tool and die apprentice training. The class is structured around a workbook approach to learning, with lecture sessions preceeding workbook assignment sessions. Topics covered include: lines on blueprints, basic auxiliary projection, sections, section lining, dimensioning, sub assembly and assembly drawings, stock list, revisions, title blocks, general notes, assembly dimensions.
- TD106 Layout and Precision Measurement (2, .5, 1.75) Prerequisites: TD105**
This course is a technical blueprint reading course with practical application. The class is structured around a workbook approach to learning, with lecture sessions preceeding workbook assignment sessions. Topics covered include: general tolerancing, geometric and positional tolerancing and symbols, fits between mating parts, weldment blueprint reading and weldment assembly. The student will be required to check manufactured parts against part prints, with precision measuring devices.
- TD110 Descriptive Geometry (3,1,4) Prerequisites: TD100**
A laboratory/lecture course consisting of one hour of lecture session and four hours of supervised laboratory instruction each week. Topics covered include projection of points, lines, and planes, revolution of objects, intersection of planes and solids, and projection of oblique and true view surfaces.
- TD120 Shop Drawing (2, .5, 1.75) Prerequisites: None**
A condensed course covering the basic principles and techniques of shop drafting, stressing the essentials of: lettering, instrument usage, technical terms, applied geometry, freehand sketching, orthographic auxiliary and section drawings, and dimensioning practices. Pictorial drawing and presentation of engineering data through the media of charges and graphs is also included.
- TD130 Technical Drafting II (3,1,4) Prerequisites: TD100**
This is a lecture/laboratory course and includes one hour of lecture theory directly related to four hours of instructor supervised laboratory sessions. The course includes dimensioning, (English and metric) tolerancing, threads, springs, representation of screws, nuts, bolts, dowels, fastening devices, geometric and positional tolerancing, and detailing of assembly drawings.

- TD135 **Tool and Die Design I (2,.5,1.75)** Prerequisites: TD120 100
 This course is structured primarily for the tool and die apprentice student. Lectures will be followed by reinforcing laboratory sessions which will consist of sketching sheet metal die components. Emphasis is not on line quality and technique, but merely the communication of ideas and design graphically. Topics covered include: basic discussion of tools, dies and punches; blanking force; standard die sets and die components; drop through blank dies; combination blank and pierce return dies; and various types of positive knock-out designs. The student will be required to maintain a notebook, which will be reviewed by the instructor at the end of the course and returned for future reference.
- TD136 **Tool and Die Design II (2,.5,1.75)** Prerequisites: TD135
 This course is structured primarily for the tool and die apprentice student. Lectures will be followed by reinforcing laboratory sessions, which consist of sketching sheet metal components related to the classroom discussion. Topics covered include: basic flat part progressive dies, stock guides, pitch gauges, stock feeders, roller guides, ball bearing guide pins and bushings, strip layout; availability of various standard punches, dies, and components; and knowledge and review of tool and die standardized components and catalogs. Students must maintain notebooks. These will be reviewed by the instructor at the end of the course and returned for future reference.
- TD137 **Tool and Die Design III (2,.5,1.75)** Prerequisites: TD136
 This course is structured primarily for the tool and die apprentice student. Lectures will be followed by reinforcing laboratory sessions, which consist of sketching sheet metal die components related to the classroom discussion. Topics covered include: mathematical sheet metal blank development, sheet metal draw development and redraw sleeves, progressive dies, various types of cam piece and rom dies, pilot pins, keeper blocks for pads and slides. The student will be required to maintain a notebook which will be reviewed by the instructor at the end of the course and returned for future reference.
- TD140 **Plastic Mold Design I (2,.5,1.75)** Prerequisites: None
 This course covers the fundamentals of plastic molding, plastic product design, types of molds, toolmaking processes, equipment and methods, materials for model making and designing and drafting practices. Also studied are compression and transfer molds, injection molds for thermoplastics, cold mold design, extrusion dies for thermoplastics, blow mold construction and design, mold design for expanded polystyrene, and special fixtures.
- TD141 **Plastic Mold Design II (2,.5,1.75)** Prerequisites: TD140
 This is a continuation of TD140 which is a prerequisite.
- TD142 **Plastic Mold Design III (2,.5,1.75)** Prerequisites: TD141
 This is a continuation of TD141 which is a prerequisite.

- TD215 **Product Design (3,2,3)** Prerequisites: TD100, TD130 & TD110
This course is designed to provide the drafting technology student with the ability to analyze, design, and develop solutions to mechanical design problems. The instructional approach is to encourage the student to conceptualize and communicate using engineering graphics, mathematics, and technical science. Emphasis is placed on "manufacturability" and "producibility" of a particular new product design. Geometric dimensioning and tolerancing are also covered in this course.
- TD230 **Jig and Fixture Design (3,1,4)** Prerequisites: TD130
This is a laboratory/lecture course and includes four hours of drafting practice and one hour of drafting lecture theory directly related to the laboratory work. The course includes the design of the following jigs and fixtures: plate jig, drill jig, closed tumble fixture, leaf type jig, indexing jig and milling fixture. Use of standard components from various catalogs is also covered.
- TD250 **Computer Aided Drafting (3,2,2)** Prerequisites: TD100, Co-requisites: TD130
This course consists of computer-generated graphics to include: terminology, techniques and application of computer aided drafting, CAD, to engineering, tool design, architecture, and electronics. Two dimensional design drafting is stressed. Four hours lecture/laboratory combination.

WELDING TECHNOLOGY

- WE105 Beginning Welding (2,1,2) Prerequisites: None**
This survey course covering the step-by-step fundamentals of oxyacetylene and arc welding processes is for the person who always wanted to try welding but didn't know where to start. Safety procedures and practices of gas welding are emphasized.
- WE106 Basic Design Fundamentals in Welding (2,1,2) Prerequisites: None**
This is a running mate with WE105. Students have an opportunity to put their newfound knowledge to a practical application, making minor repairs on projects brought from home: lawnmower handles, furniture, etc.
- WE107 Welding Technique and Joint Preparation (3,1,3) Prerequisites: None**
This course gives the person who has a basic understanding of welding a chance to brush up on existing welding skills and pick up some proper technique, rod selection and learn the basics of out-of-position welding.
- WE108 Welding and Fabrication (3,1,3) Prerequisites: WE107**
This is a study of the five basic joint designs utilizing the oxyacetylene and arc process with emphasis on the 1, 2, 3, and 4 F positions.
- WE110 Automotive Welding (2,1,2) Prerequisites: None**
This course is intended to give students of automotive maintenance an understanding of the basic techniques, machine operations and safety rules pertaining to soldering, welding, and brazing of lighter gauge materials.
- WE115 Metal Sculpture (2,1,2) Prerequisites: WE105, WE107**
This is a learning adventure that lets the student control the metamorphic process. This course deals with design, fabrication and quality weldments with a relaxed informal approach.
- WE120 Welding and Fabrication II (3,1,3) Prerequisites: WE108**
For the returning student, this course will let the student pick up where he/she left off. Continuing on the 1, 2, 3, and 4 G weldments, testing welds by means of destructive and non-destructive methods will be used.
- WE121 Advanced Welding (3,1,3) Prerequisites: WE120**
This course consists of qualification type weldments in accordance with A.W.S. welding code, using S.M.A.W. process. Also included in this course is a study of T.I.G. and M.I.G. procedures.
- WE122 Related Welding Skills (3,1,3) Prerequisites: WE121**
Designed to cater to the needs of students whose curriculum calls for a related course in welding. This course covers the area in oxyacetylene flame cutting.
- WE124 Agriculture and Construction Welding (1,.5,1.5) Prerequisites: None**
This course is intended for those who must make their own repairs on machinery. Topics include: basic arc welding, basic gas welding, cast iron brazing, hard-surface application, flame cutting, and control of heat related stresses. Small student-furnished projects will be allowed but must be removed after each class.

WE125 TIG Welding (2,.5,1.75) Prerequisites: None

This course is designed around the needs of industry, where gas-tungsten arc welding (TIG) is emphasized. Both classroom and lab will concentrate on the TIG process, with some oxyacetylene welding being used for manipulative practice.

DIRECTED STUDY

XY295 **Modular Course** (1 or 2 credit hours) Prerequisites: None

Modular courses are one or two hour units of study which contain part of an existing course. Such courses respond to special, often one-time needs, and usually they will be publicized by the college separate from the regular schedules.

XY299 **Directed Studies** (1 or 2 credit hours) Prerequisites: Student must have written departmental approval

Directed study courses are usually thought of in connection with advanced students or those who have exhausted regular college offerings. The average student pursuing an associate degree would not find time for this type of credit. The concept does not apply to remedial studies.

The directed study cannot be used near the end of the semester to fill requirements, it must be planned in advance. Careful attention must be given to the description of the work proposed because there is no other course outline or description on file to document the experience.

A student interested in Directed Study must contact an instructor who will sponsor the proposed activities. That teacher will complete the written plan on proper forms and will seek approval from the instructional administrator before any work begins. The student must enroll in an appropriately labeled section of Directed Studies 299, e.g., HU299, SS299, etc.

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Automotive Mechanics
Nursing Education
Automotive Mechanics
Counselor
Counselor
Social Science
Business Studies
Social Science
Language Arts
Nursing Education
Mathematics
Natural Science
Developmental Studies
Natural Science
Office Education

MONTCALM COMMUNITY COLLEGE CALENDAR

Spring, 1987

Registration

December 2 and 3
January 5, 6 and 7
January 9 through 20
January 9
March 22 through 29
April 17 (Good Friday)
May 8
May 8

Students enrolled Fall 1986
Open to all students
Late registration
Classes begin
Spring break
No classes/College closed
Classes end
Graduation

Summer, 1987

Registration

April 29 and 30
June 3 and 4
June 8 through 11
June 8
July 4 (Independence Day)
July 31

Students enrolled Spring 1987
Open to all students
Late registration
Classes begin
No classes/College closed
Classes end

Fall, 1987

Registration

August 12 and 13
August 17 through 21

August 24 and 25
August 27 through September 8
August 27
September 7 (Labor Day)
November 26 and 27 (Thanksgiving)
December 21

Returning students
New student orientation and
registration
Open to all students
Late registration
classes begin
No classes/College closed
No classes/College closed
Classes end

Spring, 1988

January 16 - May 13

Fall, 1988

August 25 - December 19

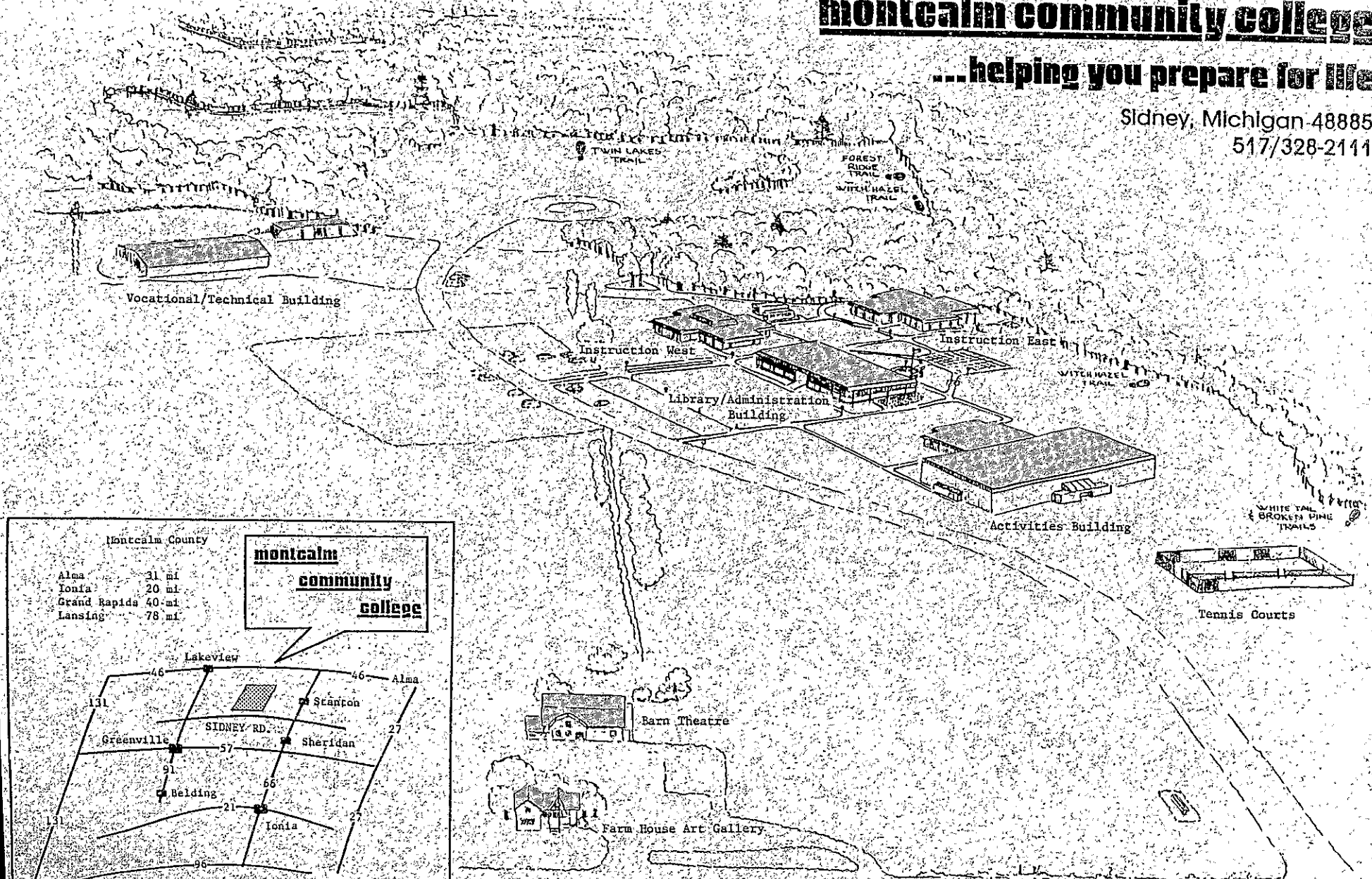
Spring, 1986

January 14 - May 12

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...helping you prepare for life

Sidney, Michigan 48885
517/328-2111



STUDENTS, PLEASE NOTE: Campus maps identifying classroom locations are available in the Student Services Office located in the Administration building.

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