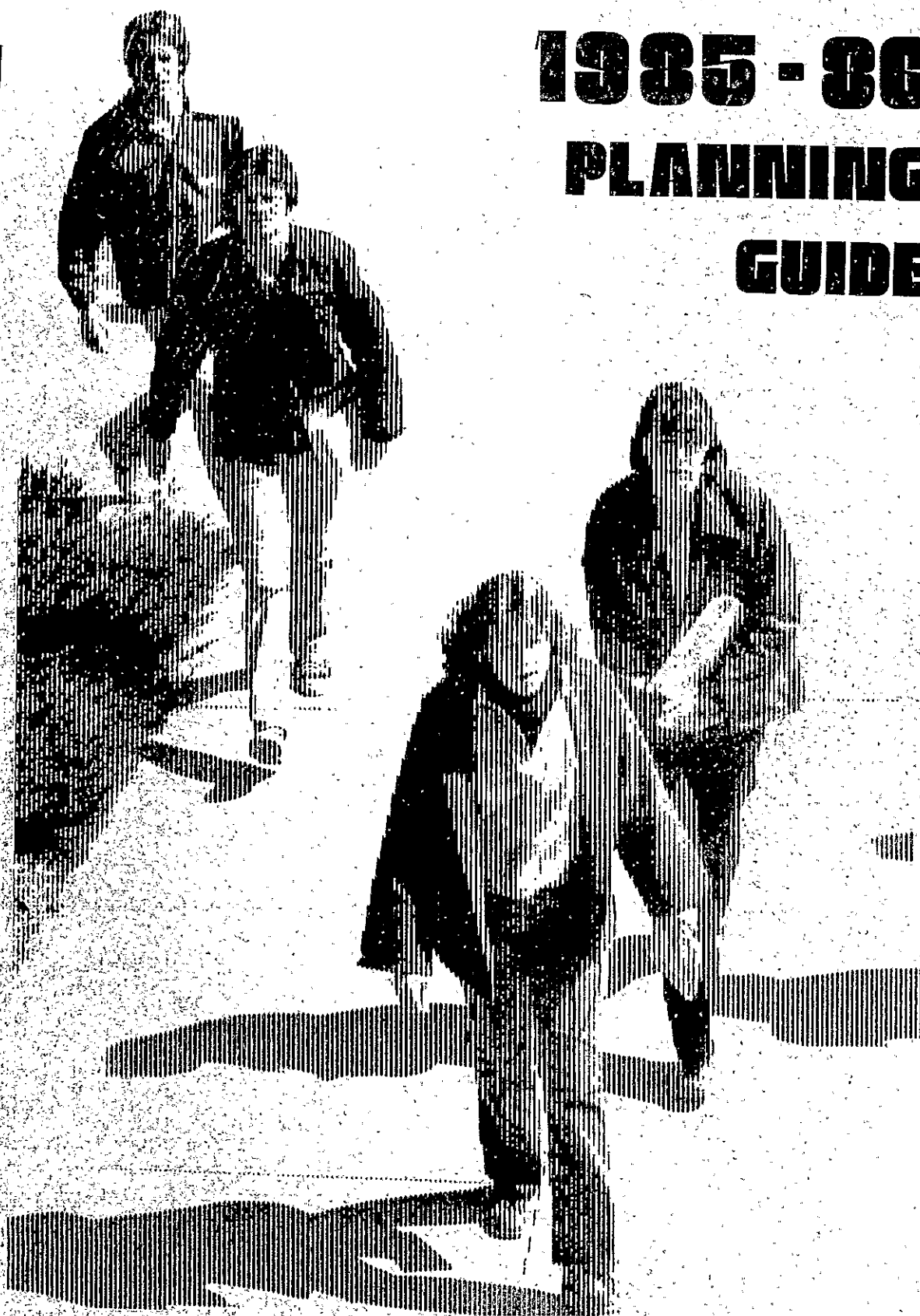


*Sally - Changes*

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**montcalm community college**

# **1985 - 86 PLANNING GUIDE**



**...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 Director of Student Services.

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

### **HOW TO APPLY FOR ADMISSION**

1. You may obtain the application form from your high school counselor or the MCC Admissions Office.
2. Fill out and send the application with the non-refundable fee to the college's Admissions Office.
3. Have your high school send a copy of your transcript or high school equivalency examination (GED) to us.
4. Refer any questions you have to your 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 Director 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.

Mrs. Lois Springsteen is the college EEO Officer/Title IX - Section 504 coordinator. Her office is located in the Library/Administration Building - telephone 517/328-2111, extension 220.

## **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 ~~or owns property in~~ 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

### **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: Nursing 115, 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 tuition and fees should consult the Business Office concerning a loan no less than three weeks prior to the enrollment date.
3. 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.

### 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. It is best to 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.

### 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 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 students over the age of 21. Amount will be \$200 per semester.
8. Over 60 Scholarships - tuition scholarships are available to persons age 60 or older.
9. MCC Foundation Scholarship (in-district) - two \$1000 scholarships 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.

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 year. This loan bears a 9% 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, contact your high school counselor or the Financial Aid Office.

#### 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).



## 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 3 credit hour 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 descriptions)		
TOTAL for DEGREE		60+

\* OR (having earned B+ or better in LA100) any other 3 credit hour language arts course except Speech or Drama.

\*\* OR Biological Science or Physical Science  
OR Humanities I or Humanities II  
OR any other social science course

NS100 or NS101  
HU200 or HU201

NOTE: Nursing Students see page 27 for degree requirements.

## DEGREE INFORMATION

### ASSOCIATE DEGREE IN GENERAL STUDIES

<u>Course Titles</u>	<u>Course Numbers</u>	<u>Credit Hours</u>
Intro to Social Science I	SS110	4

OR

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) 11 or 12

TOTAL REQUIRED HOURS 15

TOTAL ELECTIVE HOURS 45

TOTAL for DEGREE 60+

## 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
W	Withdrew while passing
F	Withdrew while failing
I	Incomplete (see note below)
V	Audit (see note below)
S	Satisfactory completion
U	Unsatisfactory
N	Preceding a grade indicates credit is not recommended for transfer-terminal credit only

**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 course work by the close of a semester for reasons beyond his/her 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. The following procedure is 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.

## INFORMATION FOR TRANSFER STUDENTS

### STATEWIDE COLLEGE & 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 Colleges  
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 |
| 2. Humanities          | 8 Semester Hours |
| 3. Social Sciences     | 8 Semester Hours |
| 4. Natural Sciences    | 8 Semester 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.

## COURSES COMMONLY REQUIRED BY 4 - YEAR COLLEGES AND UNIVERSITIES

### BIOLOGY, CONSERVATION, DENTISTRY, MEDICINE, MORTUARY SCIENCE, OPTOMETRY, PARAMEDICAL TECHNOLOGY, PHYSICAL THERAPY, VETERINARY MEDICINE

botany, micro-biology, anatomy & physiology, zoology, physics, anthropology, mathematics, chemistry, geography, psychology, physical education, emergency health care, child psychology, history, foreign language

### ENGINEERING, GEOLOGY, EARTH SCIENCE, ENVIRONMENTAL STUDIES

mathematics (through calculus and statistics), chemistry, physics, economics, data processing, physical education, music, art, history, blueprint reading, welding, typing (or keyboarding), manufacturing processes, anthropology, foreign language

### BUSINESS ADMINISTRATION, ACCOUNTING

accounting (financial, managerial, cost, etc.), business law management, advertising, human relations in business, typing (or keyboarding), data processing, mathematics, financial principles, economics, principles of investment, purchasing, history, psychology, foreign language

### PSYCHOLOGY, SOCIAL WORK, SOCIOLOGY, LAW, POLITICS

anthropology, mathematics, literature, philosophy, history, music, arts, economics, accounting, foreign language

### JOURNALISM, LIBRARY SCIENCE

literature, journalism, economics, anthropology, typing (or keyboarding), geography, psychology, sociology, history, art, music, data processing or word processing, foreign language

### EDUCATION, PHYSICAL EDUCATION, MUSIC EDUCATION, MUSIC THERAPY

Elementary Education: literature, geography, history, music, art, mathematics, physical education, science, foreign language

Secondary Education: chemistry, physics, geography, music, art, mathematics, physical education, history, literature, foreign language

Special Education: economics, literature, statistics, science, anthropology, history, sociology, psychology, art, music, foreign language

## INFORMATION FOR CERTIFICATES AND APPLIED ARTS & SCIENCE 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 information cannot be considered as an agreement or contract between the individual student and Montcalm Community College or its staff.

## **CERTIFICATE & APPLIED ARTS AND SCIENCE PROGRAMS**

### **CERTIFICATE PROGRAMS**

Apprentice Training  
Automotive Servicing  
Cosmetology  
Drafting  
Electrical Technology  
Food Service Technology  
Machine Tool Operation  
Nursing  
Office Education  
    Clerk-Typist  
    Legal Office Assistant  
    Medical Office Assistant  
    Stenographer  
    Word Processing  
Welding

### **APPLIED ARTS AND SCIENCES PROGRAMS**

Automotive Technology  
Business Data Processing  
Business Studies  
    Accounting  
    Business Administration  
Drafting Technology  
Electronics Technology  
Food Service Technology  
Industrial Technology  
Nursing  
Office Education  
    Executive Secretary  
    Legal Secretary  
    Medical Secretary  
    Word Processing



## APPRENTICE TRAINING

### CERTIFICATE

Admission into the apprenticeship training program is gained by way of employment and/or sponsorship by the employer and is contingent upon the development of 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.

The 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 & die makers, and auto mechanics are also available.

#### FIRST LEVEL COURSES

MA110 Shop Math I	2
HU121 Sketching	2
TD105 Blueprint Reading	2
IT155 Safety & First Aid	2

#### SECOND LEVEL COURSES

MA111 Shop Math II	2
MA112 Shop Math III	2
TD106 Layout & Prec. Meas.	2
TD120 Shop Drawing	2

#### THIRD LEVEL COURSES

IT102 Basic CNC Operation	2
IT270 Indus. Quality Cntrl.	2
TD135 Tool & Die Design I	2
IT100 Machine Tool Theory	2

#### FOURTH LEVEL COURSES

TD136 Tool & Die Design II	2
TD137 Tool & Die Design III	2
WE125 TIG Welding	2
IT130 Metallurgy & Heat Treatment	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 air conditioning systems. Laboratory instruction is performed on modern equipment and operating training units.

#### Fall Semester

Automotive Tools & Hardware	AM104	1
Engine Servicing I	AM106	2
Automotive Brakes & Servicing	AM108	3
Engine Servicing II Theory	AM124	2
Engine Servicing II Lab	AM125	(3) optional, but recommended
Concepts in Electronics	EL100	3
Shop Math I	MA110	2
Improving Reading & Writing	SD175	3

#### Spring Semester

Automotive Electrical Systems Theory I	AM140	2
Automotive Electrical Systems Lab I	AM141	3
Automotive Heating & Air Conditioning Theory	AM260	2
Automotive Heating & Air Conditioning Lab	AM261	(2) optional, as above
Customer Relations	BA251	2
Hydraulics & Fluid Mechanics	IT253	3
Light-Gauge Metal Welding	WE110	3

This program prepares the student for passing two of the state certification tests, and is intended to help the student obtain his/her first automotive maintenance job. Only one course (SD175) will not transfer to the Associate Degree Program.

# AUTOMOTIVE TECHNOLOGY

## ASSOCIATE DEGREE

This complete program will prepare the student for passing all eight sections of the certification exam. However, it is not necessary to have more than 62 credits (which include the required courses) to obtain your associate degree.

### Fall Semester

Freshman English I*	LA100	3
Automotive Tools & Hardware*	AM104	1
Engine Servicing I*	AM106	2
Engine Servicing Theory II*	AM124	2
Engine Servicing Lab II	AM125	3
Manual Transmission Theory	AM132	2
Manual Transmission Lab	AM133	2
Concepts in Electronics	EL100	3
Shop Math I*	MA110	2

### Spring Semester

Freshman English II**	LA101	3
Automotive Electrical Systems Theory I*	AM140	2
Automotive Electrical Systems Lab I	AM141	3
Automotive Parts & Service Management	AM204	2
Automotive Engine Performance Theory I	AM210	2
Automotive Engine Performance Lab I	AM211	2
Automotive Engine Performance Theory II	AM212	2
Automotive Engine Performance Lab II	AM213	3
Hydraulics & Fluid Mechanics	IT253	3

### Fall Semester

Introduction to Social Science I*	SS110	4
Automotive Brakes & Servicing*	AM108	3
Automotive Steering & Suspension Theory	AM130	2
Automotive Steering & Suspension Lab	AM131	2
Automotive Electrical Systems Theory II	AM142	2
Automotive Electrical Systems Lab II	AM143	3
Automatic Transmission Theory	AM230	2
Automatic Transmission Lab	AM231	2

### Spring Semester

Introduction to Social Science II**	SS111	4
Diesel Engine Theory	AM254	3
Diesel Engine Lab	AM255	3
Auto Heating & Air Conditioning Theory	AM260	2
Auto Heating & Air Conditioning Lab	AM261	2
Customer Relations*	BA251	2
Shop Math II	MA111	2
Light-Gauge Metal Welding	WE110	3

\*Required Course

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

## BUSINESS DATA PROCESSING

### 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.

#### FIRST YEAR

##### Fall Semester

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

##### Spring Semester

Freshman English II*	LA101	3
Managerial Accounting	BA116	4
Human Relations in Business	BA250	3
Introduction to Computer Programming	DP115	3
Elective		

#### SECOND YEAR

##### Fall Semester

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

##### Spring Semester

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

#### SUGGESTED ELECTIVES

Problem Solving	SD/NS108
Keyboarding	SD145
College Algebra	MA159
Economics	SS215
General Psychology	SS220

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

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16  
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✓  
**BUSINESS STUDIES**

**ASSOCIATE DEGREE**

**ACCOUNTING**

This is a two-year program leading to an Associate Degree in Applied Arts and Sciences with a specialty in Accounting. The objective of this program is to provide the background and skills necessary for an entrance job in the accounting field.

**FIRST YEAR**

**Fall Semester**

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

**Spring Semester**

Freshman English II*	LA101	3
Speech	LA210	3
Managerial Accounting	BA116	4
Managerial Math	<del>MA116</del>	3
Elective		MA109

**SECOND YEAR**

**Fall Semester**

Introduction to Social Science I	SS110	4
Legal Environment of Business	BA200	3
Cost Accounting	BA215	3
Management	BA237	3
Principles of Economics	SS215	3

**Spring Semester**

Introduction to Social Science II*	SS111	4
Cost Accounting II	BA216	3
Human Relations in Business	BA250	3
Elective		

**SUGGESTED ELECTIVES**

Introduction to Computer Programming	DP115
College Algebra	MA159
Keyboarding	SD145

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

## ASSOCIATE DEGREE (CONT'D)

### BUSINESS ADMINISTRATION

This is a two-year program leading to an Associate Degree in Applied Arts and Sciences with a specialty in Business Administration. The objective of this program is to provide the background and skills necessary for an entrance job in the business field.

#### FIRST YEAR

##### Fall Semester

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

##### Spring Semester

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

#### SECOND YEAR

##### Fall Semester

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

##### Spring Semester

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

##### SUGGESTED ELECTIVES

Retailing	BA234
Introduction to Computer Programming-Basic	DP115
College Algebra	MA159

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

## COSMETOLOGY

### CERTIFICATE

The Cosmetology program is approved by the Michigan Department of Licensing and Regulation 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.

#### FIRST YEAR

##### Fall Semester

Introduction to Cosmetology	CS100	4
Introduction to Cosmetology Lab	CS110	4
Beginning Hairstyling	CS101	4
Beginning Hairstyling Lab	CS111	4

##### Spring Semester

Beginning Hair Cutting & Permanent Waving	CS102	4
Beginning Hair Coloring & Professional Dev.	CS103	4
Beginning Hair Cutting & Permanent Waving Lab	CS112	4
Beginning Hair Coloring & Prof. Dev. Lab	CS113	4

#### SECOND YEAR

##### Fall Semester

Advanced Hairstyling	CS200	4
Advanced Hair Coloring & Permanent Waving	CS201	4
Advanced Hairstyling Lab	CS210	4
Advanced Hair Coloring & Permanent Waving Lab	CS211	4

##### Spring Semester

Advanced Hairstyling II	CS202	4
Cosmetology Salon Management & Board Review	CS203	4
Advanced Hairstyling Lab II	CS212	4
Salon Management & Board Review Lab	CS213	4

Students wishing to earn an Associate Degree in Applied Arts and Sciences must complete additional courses required for this degree (see page 7).

## DRAFTING

### CERTIFICATE

The drafting certificate program 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.

#### Fall Semester

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

#### Spring Semester

Customer Relations	BA251	2
Sketching	HU121	2
Hydraulics & Fluid Mech.	IT253	3
Manufacturing Processes	IT260	2
Shop Math II		
or Intermediate Algebra	MA111	2
Tech. Drafting II	TD130	3



## DRAFTING TECHNOLOGY

### ASSOCIATE DEGREE

The sequence of courses shown below allows students to earn an associate degree in applied arts and science 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. This degree is accepted for transfer as a package by some universities. Please check with your counselor.

#### FIRST YEAR

##### Fall Semester

Metallurgy & Heat Treatment	IT130	3
Basic Machine Operation	IT220	3
Freshman English I	LA100	3
Elementary Algebra	MA100	3
Technical Drafting I	TD100	3

##### Spring Semester

Sketching	HU121	2
Manufacturing Processes	IT260	2
Freshman English II*	LA101	3
Intermediate Algebra	MA104	3
Desc. Geometry	TD110	3
Technical Drafting II	TD130	3

#### SECOND YEAR

##### Fall Semester

Concepts of Electronics	EL100	4
Basic CNC Operation	IT102	2
Introduction to Social Science I	SS110	4
Jig & Fixture Design	TD230	3
Intro to Elec. Data Proc.	DP110	3

##### Spring Semester

Customer Relations	BA251	2
Hydraulics & Fluid Mechanics	IT253	3
Introduction to Social Science II*	SS111	4
Tool & Die Design - Metal**	TD136	2
Computer Aided Drafting I	TD250	3

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

\*\*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.

See your Technical Counselor for help in selection.

#### Fall Semester

Improving Reading & Writing	SD175	3
Elementary Algebra*	MA100	3
Concepts of Electronics	EL100	3
Electronic Devices	EL120	3
Elective		3

#### Spring Semester

Customer Relations	BA251	2
Intermediate Algebra**	MA104	3
Electronic Test Equipment	EL160	3
Electronic Circuit Analysis	EL110	3
Elective		4

\*May substitute Intermediate Algebra

\*\*May substitute Trigonometry

#### SUGGESTED ELECTIVES

Intro to Elec. Data Processing	DP110
Industrial Electrical Maintenance I & II	EL251, EL252

# ✓ ELECTRONICS TECHNOLOGY

## 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. Sixty credits are required for the degree.

### Fall Semester

Freshman English I	LA100	3
Intermediate Algebra	MA104	3
Concepts of Electronics	EL100	3
Electronic Devices	EL120	3
Intro to Data Proc	DP110	3

### Spring Semester

Freshman English II*	LA101	3
Trigonometry	MA102	3
Electronic Circuits	EL210	3
Electronic Circuit Analysis	EL110	3
Elective		2-4

### Fall Semester

Intro to Social Science	SS110	4
Applied Technical Physics I	NS111	3
Microprocessors I	EL141	3
Microprocessors II	EL241	1
Digital Electronics	EL230	3
Elective		2-4

### Spring Semester

Intro to Social Science II*	SS111	4
Applied Technical Physics II	NS112	3
Customer Relations	BA251	2
Electronic Test Equipment	EL260	3
Elective		2-4

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

## 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		3
Elective		3

### Spring Semester

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

## FOOD SERVICE TECHNOLOGY

### 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, small business operation as it relates to the food industry. In addition, they will fulfill all the requirements for Applied Arts and Sciences Degree.

#### FIRST YEAR

##### Fall Semester

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

##### Spring Semester

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

#### SECOND YEAR

##### Fall Semester

Introduction to Social Science I	SS110	4
Equip. Design, Layout & Selection	FST200	2
Food Service Management	FST201	3
Food Production Skills-Bakery	FST210	4

##### Spring Semester

Introduction 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

## INDUSTRIAL TECHNOLOGY

### ASSOCIATE DEGREE

The Industrial Technology graduate will have a well-rounded background, which prepares him/her for work in manufacturing and process industries as a planner, buyer, 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.

#### 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 Processing	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 Measurement	TD106	2

#### SECOND YEAR

##### Fall Semester

Concepts of Electronics	EL100	3
Basic CNC Operation	IT102	2
Metallurgy & Heat Treatment	IT130	2
Applied Technical Physics I	NS111	3
Introduction to Social Science I	SS110	4

##### Spring Semester

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

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

## 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.

#### 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 Preparation	WE107	3

#### Spring Semester

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

## NURSING

### CERTIFICATE

The Montcalm Community College 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 and Disease	NUR110	2
Clinical Practicum I	NUR115	3
Concepts of Interpersonal Relationships	NUR120	2
Introduction 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

### PRACTICAL NURSING CERTIFICATE



# NURSING ASSOCIATE DEGREE

The Montcalm Community College 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 an 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-NUR200-2 credits and Physical Fitness-PE110-1 credit.)

## Fall Semester - 16 weeks

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

## Fall Semester - 16 weeks

Advanced Med.-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 (8 wks.clinical)
Community Mental Health	NUR255	6 (8 wks.clinical)
Freshman English II*	LA101	3
Microbiology	NS201	4
Political Science or Introduction to Social Science I	SS240/110	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 7).

96/97  
Total cr.

## 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 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.

##### Fall Semester

Intermediate Typing	OE101	3
Clerical Accounting	OE117	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

#### 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.

##### Fall Semester

Legal Environment of Business	BA200	3
Intermediate Typing	OE101	3
Clerical Accounting	OE117	3
Business Communications I	OE129	3
Legal Terminology & Transcription	OE205	4

##### Spring Semester

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

CERTIFICATES (CONT'D.)  
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.

<u>Fall Semester</u>		<u>Spring Semester</u>	
Intermediate Typing	OE101 3	Emergency Health Care	PE205 2
Clerical Accounting	OE117 3	Advanced Typing	OE202 3
Bus. Communications I	OE129 3	Medical Office Proced.	OE208 3
Medical Term. & Trans.	OE207 3	Voice Transcription	OE220 3
Word Processing I	OE225 4	Business Calculators	OE240 3
	<u>16</u>		<u>14</u>

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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.

<u>Fall Semester</u>	
Intermediate Typing	OE101 3
Shorthand I	OE103 4
Clerical Accounting	OE117 3
Business Mathematics	OE120 3
Business Communications I	OE129 3
	<u>16</u>

<u>Spring Semester</u>	
Advanced Typing	OE202 3
Shorthand II	OE104 4
Voice Transcription	OE220 3
Office Procedures	OE230 3
Business Calculators	OE240 3
	<u>16</u>

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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.

<u>Fall Semester</u>	
Intro. to Elec. Data Processing	DP110 3
Intermediate Typing	OE101 3
Business Math	OE120 3
Business Communications I	OE129 3
Word Processing I	OE225 4
	<u>16</u>

<u>Spring Semester</u>	
Business Communications II	OE130 3
Advanced Typing	OE202 3
Voice Transcription	OE220 3
Office Procedures	OE230 3
Word Processing II	OE226 3
	<u>15</u>

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**OFFICE EDUCATION  
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 course work 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 Communication II*	OE130	3
Advanced Typing	OE202	3
Voice Transcription	OE220	3
Word Processing I	OE225	4

**SECOND YEAR**

Fall Semester

Introduction to Social Science I	SS110	4
Shorthand I	OE103	4
Clerical Accounting	OE117	3
Elective		
Elective		

Spring Semester

Introduction 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 in Business	BA250
Introduction to Electronic Data Processing	DP110
Word Processing II	OE226
Word Processing III	OE227
Field Experience	OE290

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

## ASSOCIATE DEGREE (CONT'D.)

### LEGAL SECRETARY

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 course work 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

Introduction to Social Science I	SS110	4
Legal Environment of Business	BA200	3
Shorthand I	OE103	4
Clerical Accounting	OE117	3
Legal Terminology & Transcription	OE205	4

#### Spring Semester

Introduction 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 in Business	BA250
Introduction to Electronic Data Processing	DP110
Word Processing II	OE226
Word Processing III	OE227
Business Communications	OE130
Field Experience	OE290

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

## ASSOCIATE DEGREE (CONT'D.)

### MEDICAL SECRETARY

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 course work 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

Introduction to Social Science I	SS110	4
Intermediate Shorthand	OE104	4
Clerical Accounting	OE117	3
Medical Terminology	OE207	3
Elective		

##### Spring Semester

Introduction to Social Science II*	SS111	4
Emergency Health Care	PE205	2
Advanced Shorthand	OE203	4
Medical Office Procedures	OE208	3
Office Procedures	OE230	3

#### SUGGESTED ELECTIVES

Introduction to Business	BA135
Human Relations in Business	BA250
Introduction to Electronic Data Processing	DP110
Word Processing II	OE226
Word Processing III	OE227
Business Communications II	OE130
Field Experience	OE290

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

## ASSOCIATE DEGREE (CONT'D.)

### WORD PROCESSING

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 course work 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

Introduction to Social Science I	SS110	4
Intro. to Elec. Data Processing	DP110	3
Clerical Accounting	OE117	3
Word Processing II	OE226	3
Elective		

##### Spring Semester

Introduction 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 in Business	BA250
Intro to Computer Programming	DP115
Field Experience	OE290

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

## 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 which follow. Additional welding courses are available for those who wish to develop their skills even further.

#### Fall Semester

Basic Machine Operation	IT220	3
Welding Technique and Joint Prep.	WE107	3
Welding and Fabrication I**	WE108	3
Shop Math I	MA110	2
Blueprint Reading	TD105	2
Metallurgy & Heat Treatment	IT130	2
Sketching	HU121	2

#### Spring Semester

Welding and Fabrication II	WE120	3
Related Welding Skills**	WE122	3
Layout & Precision Measurement	TD106	2
Improving Reading & Writing	SD175	3
Customer Relations	BA251	2
Hydraulics & Fluid Mechanics	IT253	3

\*\*May substitute any other welding course



## 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	Government/SS
Acting/LA	Heat Treatment Metals) (App.)/IT
Advertising/BA	(Ferrous Metals) (App.)/IT
Algebra/MA	History/SS
Allied Health/AH	Humanities/HU
Analytic Geometry/MA	Human Relations/BA
Anatomy/NS	Hydraulics/IT
Anthropology/SS	Industrial Supervision
Art/HU	& Management/BA
Art (Appreciation)/HU	Journalism/LA
Automotive Mechanics/AM	Law (Business)/BA
Biology/NS	Law Enforcement/LE
Blueprint Reading/TD	Legal Secretary/OE
Bookkeeping/OE	Literature/LA
Botany/NS	Machine (Lab) (App.)/IT
Business Communications/OE	Machine Shop/IT
Business Correspondence/OE	Management/BA
Business Law/BA	Marketing/BA
Business Mathematics/OE	Mathematics/MA
Calculus/MA	Mathematics (App.)/MA
Ceramics/HU	Mathematics (Business)/OE
Chemistry/NS	Medical Shorthand/OE
Communications/LA	Medical Terminology/OE
Communications (Business)/OE	Metallurgy Theory (App.)/IT
Composition/LA	Mold Making & Die Casting Dies
Computer Programming/DP	(Apprentice)/TD
Computers/DP	Music/HU
Correspondence/OE	Natural Science/NS
Data Processing/DP	Nursing (Practical)/NUR
Die Drafting (Apprentice)/TD	Nursing (ADN)/NUR
Diesel Engine/AM	Office Practice/OE
Directed Studies/XY	Oral Interpretation/LA
Drafting Technology/TD	Painting/HU
Drafting & Design (App.)/TD	Philosophy/HU
Drama/LA	Photography/HU
Drawing/HU	Physical Fitness/PE
Economics/SS	Physical Education/PE
Electricity/Electronics/EL	Physical Science/NS
English/LA	Physics/NS
Executive Secretary Studies/OE	Physiology/NS
Finance (Personal)/BA	Political Science/SS
Fitness/PE	Psychology/SS
French/FL	Reading/SD
General Business/BA	Religion/HU
Geography/SS,NS	Safety and First Aid/IT

(continued on next page)

Salesmanship/BA  
Science/NS  
Sculpture/HU  
Secretarial Studies/OE  
Shop Drawing/TD  
Shorthand/OE  
Sketching/HU  
Social Science/SS  
Sociology/SS  
Spanish/FL  
Speech/LA  
Sports/PE  
Statistics/MA  
Supervision & Mgt./BA  
Taxation (Business)/BA  
Technical Drafting/TD  
Theatre/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, (4,2,2) REPRESENTS FOUR SEMESTER HOURS OF CREDIT GIVEN FOR THE COURSE, TWO OF THE FOUR HOURS WILL BE LECTURE/DEMONSTRATION, AND TWO OF THE FOUR HOURS WILL BE LABORATORY-TYPE CLASSES.) IN SOME CASES THE INSTRUCTOR WILL ASSIGN ADDITIONAL LABORATORY HOURS.

## ALLIED HEALTH

### AH100 Introduction to ORT (1,1,0)

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)

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)

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.



### AH103 Surgical Principles and Procedures I (4,2,4)

*? 3,3,0 Doesn't match taxonomy - see p.*  
This course provides the trainee with beginning knowledge for uniform and safe performance in the operating room. The total needs of the surgical patient, pre-operative preparation, and other routines are emphasized. Also included is coordinated clinical practice with emphasis on basic surgical technician skills including the scrub, proper use of equipment and identification, and care and use of instruments.



### AH104 Surgical Principles & Procedures II (5,3,3)

*? 5,5,0*  
This course will develop in-depth knowledge sufficient for the technician trainee to be a safe and productive assistant to the professional in the operating room. Specific types of surgical procedures will be learned with full development of the skills to assist with these surgical procedures. The coordinated clinical experience is vital to the technician training. Prerequisite courses: AH100, AH101 or AH102, and AH103.

### AH105 Food Service for Health Care Facilities I (1,1,0)

This course is intended for people employed in food service. Basic course includes: communications, sanitation, safety, food handling, regulations, nutrition and therapeutic diets.

### AH106 Food Service for Health Care Facilities II (1,1,0)

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. Prerequisites: AH105.

**AH107 Health Care Housekeeping (1,1,0)**

This course will examine the following principles and techniques of professional housekeeping in health care facilities: 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.



**AH108 Introduction to Child Development Program (1,1,0)**

This course is designed to increase awareness and develop skills and competencies to use in meeting the needs of specific groups of preschool children in child development settings. Emphasis will be directed toward nurturing the children's physical, social, emotional and intellectual growth; establishing and maintaining a child care environment and promoting parent-child relationships.

**AH125 Adult Foster Care in Michigan (1,1,0)**

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)**

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 PREREQUISITE FOR THE FOLLOWING ONE CREDIT COURSES.

**AH110 Adult Foster Care Programming (1,1,0)**

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)**

This course that 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 Aging Residents (1,1,0)**

This course will relate to overall program management. It will review standards and policies specific to the aged resident, role of the caregiver, role of Adult Foster Care, individual program planning for residents, i.e., motivation, drug-monitoring, helping residents deal with death in the home, and community health resources.

**AH145 Mental Retardation (1,1,0)**

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)**

This is a skill development course that presents techniques to assess 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)**

This is a skill development course that covers the techniques of emergency care specifically relevant to the Adult Foster Care setting.

**AH160 Health Care/Nutrition (1,1,0)**

This is a course which covers the fundamentals of good nutrition, menu planning, meal preparation, quantity buying, and kitchen safety.

**AH165 Facility Environmental Management (1,1,0)**

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)**

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)**

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)**

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)**

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.

**AH195 Mental Illness (1,1,0)**

This course covers the definitions of mental illness and mental health, classification of mental illness, historical and current approaches to treatment, including medication, and the role of the Adult Foster Care program and the caregiver.

**AH196 Programs for Mentally Ill Residents (1,1,0).**

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.

**AH250 HOME CARE AIDE (8,6,4)**

This course includes basic nursing skills instruction to selected individuals who will perform home making and/or home care tasks which a person in the home may be unable to do because of age, absence, illness, and/or physical disability. Clinical experience in the nursing home and home care agencies is included.  
Prerequisites: None.

## **AUTOMOTIVE MECHANICS TECHNOLOGY**

### **AM100 Automotive Gas Engines Theory (3,3,0)\***

This course provides the student with an in-depth study of the construction and operation of automotive gas and diesel engines.

### **AM101 Automotive Gas Engines Lab (5,0,7)\***

This course provides the student shop experience in the diagnosis and overhaul procedure involved with automotive gas and diesel engines. The student will develop proficiency in the use of precision measuring instruments, special tools, and machine techniques as used in the repair of these units. Prerequisites: AM 100 or concurrently

### **AM102 Manual Transmissions, Rear Axles and Drive Trains (5,2,5)\***

This course provides the student shop experience in the diagnosis and overhaul procedure involved in manual transmissions, rear axles, and drive trains. The student will develop proficiency in the use of precision measuring instruments and special tools as used in the repair of these units.

### **AM104 Automotive Tools & Hardware (1,1,0)**

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 cost.

### **AM106 Engine Servicing I (2,1,2)**

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 Automotive Brakes and Servicing (3,1,3)**

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)**

This course provides a basic knowledge of the operation, maintenance and minor repair procedures of small gasoline engines.

### **AM118 Auto Maintenance-For the Homemaker (2,1,1)**

This course provides the necessary knowledge to recognize danger signals, handle emergency problems, make minor repairs and perform general maintenance on the automobile.

### **AM124 Engine Servicing Theory II (2,2,0)**

This course covers cylinder head and crankcase details of construction, operation, 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. Pre- or Corequisite: AM106 or permission.

\* Superseded



**AM125 Engine Servicing Lab II (3,0,4)**

This lab course gives students the opportunity to experience the use of special tools, measuring instruments, test devices, and specifications as applied to engine rebuilding. Pre- or Corequisite: AM124, AM104, or permission.

**AM130 Automotive Steering and Suspension Theory (2,2,0)**

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. Pre- or Corequisite: AM108, IT253, or permission.

**AM131 Automotive Steering and Suspension Lab (2,0,3)**

This course gives useful practical experience in diagnosing troubles, repairing and adjusting systems covered in AM130. Pre- or Corequisite: AM130, AM104, or permission.

**AM132 Manual Transmissions Theory (2,2,0)**

This course covers principles, history, and methods of servicing the many varieties of manual transmissions, differentials, and drivelines in use today. Pre- or Corequisite: none. For maximum gain, enroll in AM133 at the same time.

**AM133 Manual Transmissions Lab (2,0,3)**

This course gives useful practical experience in diagnosing troubles, repairing and adjusting manual transmissions, differentials, and drivelines covered in AM132. Pre- or Corequisite: AM132, AM104, or permission.

**AM140 Automotive Electrical Systems Theory I (2,2,0)**

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. Pre- or Corequisite: ~~AM105~~ or EL100.

**AM141 Automotive Electrical Systems Lab I (3,0,4)**

This course gives students valuable practical experience in the use of tools and test equipment for performing the tasks learned in AM140 above. Pre- or Corequisite: AM104, AM140.

**AM142 Automotive Electrical Systems Theory II (2,2,0)**

A very complete study of the many electrical systems except starting, charging, and ignition 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. Pre- or Corequisite: AM105 or EL100.

**AM143 Automotive Electrical Systems Lab II (3,0,4)**

This course gives students valuable practical experience in servicing, troubleshooting and repair of the several systems studied in AM142 above. Pre- or Corequisite: AM142, AM104.

**AM150 Automotive Engine Performance Theory (3,3,0)\***

This course provides an indepth study of the construction and operation of current ignition, fuel, and emission control systems.

\*Superseded

**AM151 Automotive Engine Performance Lab (5,0,7)\***

This course provides shop experience in the diagnosis and repair procedures involved in the ignition, fuel, and emission control systems of the automobile. The students will be able to improve their proficiency in the areas of conventional and electronic ignition systems, fuel systems including current domestic and imported carburetors, computer controlled carburetors, throttle body injection, electronic fuel injection and emission control systems. The student will also use such equipment as Ignition Scopes, Distributor Machines, and Infrared Analyzers. Prerequisites: AM150, within one year or concurrently.

**AM152 Automotive Electrical Systems (5,2,5)\***

This course provides technical knowledge needed to diagnose and repair electrical problems as they pertain to today's automobile.

**AM200 Automatic Transmissions (5,2,5)\***

This course provides technical knowledge and the practical experience to diagnose and repair automatic transmission problems. All modern popular makes of automatics are covered. Included is an in-depth study of the hydraulic and mechanical functional aspects of the automatic.

**AM201 Automotive Brakes (4,2,3)\***

This course provides the student with the necessary technical knowledge and practical experience to diagnose and repair brakes and braking system problems. Job experience involves diagnosis and repair on live late model units using latest methods on modern equipment.

**AM202 Automotive Front Ends and Steering (4,2,3)\***

This course provides the student the necessary technical knowledge and the practical experience to diagnose and repair front end, steering, and suspension problems. All American make and some foreign systems are covered.

**AM204 Automotive Parts & Service Management (2,2,0)**

This course deals with the day-to-day operation of a parts and service 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)**

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. Pre- or Corequisite: AM124.

**AM211 Automotive Engine Performance Lab I (2,0,3)**

This course allows the student to apply the knowledge gained in AM210 to service, diagnose, and repair the units studied. Use of special analytical equipment is stressed. Pre- or Corequisite: AM210, AM104.

**AM212 Automotive Engine Performance Theory II (2,2,0)**

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. Pre- or Corequisite: AM211, AM105, EL100.

**AM213 Automotive Engine Performance Lab II (3,0,4)**

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. Pre- or Corequisite: AM212.

**AM230 Automatic Transmission Theory (2,2,0)**

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. Pre- or Corequisite: AM106, AM105, IT253, or permission.

**AM231 Automatic Transmission Lab (2,0,3)**

This is a course dealing with removal, replacement, rebuilding, and tests for automatic transmissions. It encourages application of all principles learned in AM230 above. Pre- or Corequisite: AM104, AM230, or permission.

**AM232 Automotive Parts Management (2,2,0)\***

This course provides an in-depth study of the operation and management of this automotive replacement parts section of the Automotive Trades. Familiarization with parts coding along with inventory control, pricing, and sales techniques constitutes a major part of this course. Included in the course are the fundamentals of bookkeeping and the handling of the currency as it applies to parts management sales. Parts coding systems and unique features of all major automobile manufacturers in the United States as well as popular foreign car makes will be included.

**AM233 Automotive Service Management (2,2,0)\***

This is a comprehensive course in the management of the service department of the auto dealership or service garage. The major emphasis of the course will be on the accurate diagnosis of automobile defects, cost estimating, quality control, personnel management, scheduling, and customer relations. All aspects of service management will be explained and practiced through simulated and actual service procedures.

**AM250 Diesel Engines Theory (3,3,0)\***

This course is a study, in theory, of basic diesel engines and related components not usually found on automotive gas engines. Included is the study of fuel injection systems, governors, and turbochargers.

**AM251 Diesel Engines Lab (5,0,7)\***

This course provides the student with the necessary technical knowledge and practical experience to service, repair and diagnose diesel engines in the truck, automobile, farm or heavy equipment fields. Prerequisite: AM250 or concurrent

**AM252 Automotive Heating and Air Conditioning (4,0,5)\***

This course provides the basic knowledge of automotive heating and air conditioning theory and service diagnosis procedures. In addition, it is intended to help the student develop correct working habits and good judgment in the performance of his duties as an air conditioning technician.

\*Superseded

**AM254 Diesel Engine Theory (3,3,0)**

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 also enroll in AM255 below. Prerequisite: none.

**AM255 Diesel Engine Lab (3,0,4)**

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 fields. Pre- or Corequisite: AM104, AM254, or permission.

**AM260 Automotive Heating and Air Conditioning Theory (2,2,0)**

This course includes the several different systems and components used for heating and air conditioning today's vehicles. Also included are testing, troubleshooting, and servicing techniques. For practical experiences, enroll in AM261 at the same time. Prerequisite: none.

**AM261 Automotive Heating and Air Conditioning Lab (2,0,3)**

This course allows students to apply the knowledge gained in AM260 by providing several service opportunities on operating systems, using special test equipment. Pre- or Corequisite: AM260, AM104, or permission.

## BUSINESS ADMINISTRATION

- BA102 Applied Statistical Process Control (1,1,0)**  
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.
- BA115 Financial Accounting (4,4,0)**  
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 (4,4,0)**  
Basic procedures for accumulating and using the accounting data needed for managerial planning, controlling, and decision making. Prerequisite: BA115 or instructor approval.
- BA135 Introduction to Business (3,3,0)**  
The student is introduced to the environment, nature, and opportunities of business. Types of ownership are covered and the operation of business is investigated through marketing, location and layout, personnel, finance, and controls for decision making. The legal environment of business is also investigated.
- BA200 The Legal Environment of Business (3,3,0)**  
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 (3,3,0)**  
This is 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 to AICPA will be taught. Prerequisite: BA116
- BA216 Cost Accounting II (3,3,0)**  
Planning for profits and sales and controlling of costs and profits are covered. Emphasis will be placed on cost and profit analysis. Prerequisite: BA215
- BA233 Marketing (3,3,0)**  
This course is an introduction to marketing (movement of goods and services from producer to consumer), with special emphasis on the behavior of buyers in the marketplace. The major functions of marketing and their impact on the national and international economy are covered also.
- BA234 Retailing (3,3,0)**  
This course covers the functions of retailing, looking specifically at the various types and classifications of retailers. Buying and promoting, pricing, stocking goods, and dealing with customers are some of the topics covered. Some time is also spent in looking at the process of "setting up" a retail firm.

**BA235 Small Business Management (3,3,0)**

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.

**BA237 Management (3,1,2)**

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)**

Local, State, and Federal taxes of sole proprietorships, partnerships, and corporations are studied. Tax practices and procedures relating to assessment and collection are also covered.

**BA248 Advertising (3,3,0)**

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 in Business (3,3,0)**

This course covers 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)**

This course covers the ways and means of making good first impressions, maintaining satisfaction, effective communication, handling complaints, and avoiding the mistakes which offend customers. Emphasis will be given to face-to-face as well as telephone contacts.

**BA253 Principles of Investment (3,3,0)**

The student is introduced to the securities market with special attention to corporate securities and financial policies. Limited income securities, common stock, and special classes of securities are covered. Security analysis and portfolio development policies are investigated. Prerequisite: BA135 or equivalent.

## BUSINESS DATA PROCESSING

### **DP110 Introduction to Electronic Data Processing (3,3,0)**

An introduction to the principle of data processing, computer hardware with emphasis on micro-computers and computer software. The processing of data using computers. What they are and how the systems work.

### **DP112 Introduction to BASIC (1,1,0)**

This is 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)**

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. Prerequisites: DP110, OE120, or equivalent.

### **DP120 COBOL Programming (3,2,2)**

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, program design, data storage, and procedural study. Prerequisite: DP110, DP115

### **DP125 RPG II Programming (3,2,2)**

RPGII Programming provides an elementary understanding of the principles and techniques of writing business-related programs in RPGII. 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 RPGII. Prerequisite: DP110\*, DP115

### **DP215 Advanced Programming in Basic (3,2,2,)**

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. Prerequisites: DP110 and DP115 or departmental approval.

### **DP240 Systems Concepts/Design (3,3,0)**

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. Prerequisite: DP120

*What does star mean?*

**DP290 Programming Project (3,1,4)**

A comprehensive laboratory project or work experience requiring the student to conduct a detailed analysis and implementation of a data processing application program or system. Prerequisite: DP240, BA135, and BA116.



## CONSUMER EDUCATION

### **CE033 Basic Income Tax Preparation (5,5,1)**

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)**

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. Prerequisite: A willingness to learn first aid and emergency medical procedures.

### **CE100 Basic Consumerism (3,3,0)**

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

3,3,0

### CS100 Introduction to Cosmetology (4,4,0)

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.

3,3,0

### CS101 Beginning Hairstyling (4,4,0)

Students 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.

3,3,0

### CS102 Beginning Hair Cutting and Permanent Waving Theory (4,4,0)

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.

3,3,0

### CS103 Beginning Hair Coloring and Professional Development Theory (4,4,0)

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)

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)

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)

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)

This course will provide students with laboratory experience in hair coloring, chemical hair relaxing, wiggery and professional development and ethics.

3,3,0

### CS200 Advanced Hairstyling (4,4,0)

This course will provide students with an introduction to cosmetic chemistry. Students will receive training in advanced hairstyling and shaping. Prerequisite: CS101 and CS111.

3,3,0

### CS201 Advanced Hair Coloring and Permanent Waving (4,4,0)

This course is a continuation of advanced hairstyling with special emphasis on coloring and permanent waving. The basics of trichology will also be presented. Prerequisite: CS103 and CS113

- 3, 3, 0
- CS202 Advanced Hairstyling II (4,4,0)**  
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 be further developed. Prerequisite: CS101 and CS111.
- 3, 3, 0
- CS203 Cosmetology Salon Management and Board Review Theory (4,4,0)**  
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. Prerequisites: CS200, 201, 202, 210, 211, 212, and CS111.
- 5, 0, 10
- CS210 Advanced Hairstyling Lab (4,0,8)**  
This course will provide students with laboratory experiences in cosmetic chemistry at the introductory level. Students will practice advanced hairstyling and shaping. Prerequisite: concurrent with CS200.
- 5, 0, 10
- CS211 Advanced Hair Coloring and Permanent Waving Lab (4,0,8)**  
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.
- 5, 0, 10
- CS212 Advanced Hairstyling Lab II (4,0,10)**  
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. Prerequisite: concurrent with CS202.
- 5, 0, 10
- CS213 Salon Management and Board Review Lab (4,0,10)**  
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. Prerequisite: concurrent with CS203

36 week program

## ELECTRICITY/ELECTRONICS

### **EL100 Concepts In Electronics (3,2,2)**

Concepts of Electronics is an introductory course designed to give a thorough foundation in basic principles of electronics. Course topics include DC circuits, AC circuits, active devices, power supplies, amplifiers, digital electronics, and digital computers. Prerequisite: None

### **EL110 Electronic Circuit Analysis (3,3,0)**

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. Prerequisites: EL100, MA104 or concurrent with MA104. Approval pending in 1985.

### **EL120 Semiconductor Devices (3,3,0) formerly EL121, EL122**

The student will study, in detail, devices such as diodes, transistors, FETs, SCRs, integrated circuits, and light sensitive and emitting devices. Handling, testing, and replacement of these devices will be covered. Correct soldering and unsoldering of these components will also be covered. Corequisites or Prerequisites: EL100 and MA100. Approval pending in 1985.

### **EL141 Microprocessors I (3,3,0)**

Upon completion of this course, the student will be able to program a representative microprocessor in machine language. Prerequisites: None

### **EL160 Electronic Test Equipment (3,3,0)**

The student will study the use, theory of operation, and repair of basic test equipment such as VOMs, dual-trace oscilloscopes, frequency meters and generators, curve tracers, logic testers, and spectrum analyzers. Prerequisites: EL100, EL120 approval pending in 1985.

### **EL211 Applied Electronic Circuits I (2,1,1)**

This course will deal with the application of the theories and devices discussed in the four basic electronics courses. This will cover the topic of amplifiers. Basic amplifier concepts and audio, DC, instrumentation, power, video, RE, differential, and operational amplifiers will be discussed in lecture. Laboratory experiments involve constructions of these amplifiers and analysis. Prerequisite: EL111 and EL112 or equivalent

### **EL212 Applied Electronic Circuits II (2,1,1)**

This second course of Applied Electronic Circuits will cover power supplies and signals. The lecture material will include basic power supplies and regulated power supplies, sinusoidal and nonsinusoidal signal generation, and AM and FM modulation. Construction and analysis of these circuits will be included in the laboratory experiments. Prerequisite: EL211

### **EL220 Electronic Circuits (3,3,0) formerly EL221, EL222**

This course is a detailed study of transistor amplifiers, operational amplifiers, power supplies, oscillators, pulse generators, and modulation circuits. Prerequisites: EL110, EL120. Approval pending in 1985.

**EL230 Digital Electronics (3,3,0) formerly EL131, EL132**

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. Prerequisites: EL110, EL120 Approval pending in 1985.

**EL241 Microprocessors II (3,3,0)**

Students will study interfacing a representative digital microprocessor into the outside world via switches and displays. Prerequisites: EL220, EL230

**EL251 Industrial Electrical Maintenance I (2,1,1)**

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 controls. Prerequisite(s): EL111 and EL112 or equivalent.

**EL252 Industrial Electrical Maintenance II (2,1,1)**

A continuation of EL251, 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 Electric Code, wiring symbols and diagrams, motors and controls. Prerequisite: EL251.

**EL253 Industrial Electrical Maintenance III (2,1,1)**

This course is under development and will emphasize Programmable Controllers, their use, selection, set-up, and servicing. Prerequisites: EL252. Approval pending 1985.

## FOOD SERVICE TECHNOLOGY

### **FST100 Introduction to Food Service (3,3,0)**

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. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through M.C.C.

### **FST101 Food Service Safety and Sanitation (2,2,0)**

This course provides an indepth analysis of the Occupational Safety and Health Act as it relates to the Food Service Operator. An indepth analysis of each individual's role in sanitation as it relates to Food Service Operation and the customer it serves will also be covered. This course is used to partially fulfill the requirements for the Associates Degree in Applied Arts and Science in Food Service Technology through M.C.C.

### **FST110 Food Production Skills-General (4,2,4)**

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. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through M.C.C. Prerequisite: FST101 is recommended.

### **FST120 Food Production Skills-Entree (4,2,4)**

A continuation of FST110 with special emphasis on preparation of both luncheon and dinner entrées. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through M.C.C. Prerequisite: FST101 is recommended.

### **FST130 Meat and Portion Control (2,1,2)**

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, the methods of preparation for each. Special emphasis on meat quality and its significance to customer satisfaction and profitability will also be covered. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through M.C.C. Prerequisite: FST101 is recommended.

### **FST140 Nutrition and Menu Planning (3,3,0)**

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. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through Montcalm Community College.

**FST200 Equipment Design, Layout, Selection (2,1,2)**

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. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Technology through M.C.C.

**FST201 Food Service Management (3,3,0)**

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. This course is used to partially fulfill the requirements for the Associates Degree in Applied Arts and Science in Food Service Technology through M.C.C.

**FST210 Food Production Skills-Bakery (4,2,4)**

A continuation of FST110 and FST120, with special emphasis on preparation of all baked products, including cake and pastry decoration. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Sciences in Food Service Technology through M.C.C. Prerequisite: FST101 is recommended.

**FST220 Food Production Skills Catering (4,1,5)**

In this course the student will study the type of 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. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through M.C.C. Prerequisites: FST101 is recommended.

**FST230 Food Purchasing (3,3,0)**

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. This course is used to partially fulfill the requirements for the Associates Degree of Applied Arts and Science in Food Service Technology through M.C.C.

## FOREIGN LANGUAGES

**FL120 Elementary French I (4,4,0)**

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)**

A continuation of French 120. Prerequisite: FL120 or equivalent.

**FL130 Elementary Spanish I (4,4,0)**

This is the first half of a year long beginning Spanish course. The 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)**

A continuation of FL130. Prerequisite: FL130 or equivalent.



## HUMANITIES

### HU100 Fundamentals of Music (3,3,0)

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)

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)

This course is designed to increase the student's awareness of music programs for the elementary grades. Stress is placed in creative experiences, use of appropriate materials and methods pertinent to the elementary classroom. Development of music fundamentals is emphasized.

### HU111 Teaching Drawing to Children (1,.5,.5)

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 (1,1,5)

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)

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)

This course provides instruction and practical experience in the use of color, composition, and various painting media to create paintings. Materials and techniques suitable for children or the adult beginner in art are emphasized.

### HU115 Teaching Printmaking to Children (1,.5,.5)

This course provides instruction and practical experience in the use of various printmaking media and techniques to create designs and prints. Materials and techniques suitable for children or the adult beginner in art are emphasized.

### \* HU118 Art Materials and Methods-Studio (1,0,1)

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.

**HU119 Teaching Art Appreciation to Children (1,1,0)**

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.

**HU120 Introduction to Art (2,1,2)**

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 which he will need for the courses in drawing, painting, and ceramics.

**HU121 Sketching (2,1,1.25)**

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)**

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)**

This course provides the student with additional drawing experiences with instruction in portraits, the figure, composition, and developing self-expression. Prerequisite: HU122

**HU125 Painting I (3,1,3) Studio**

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**

This course places emphasis on composition and color theory. Prerequisite: HU125.

**HU130 Ceramics I (3,1,3) Studio**

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**

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. Prerequisite: HU130.

**HU150 Beginning Photography (3,1,2)** *Ask Dennis if this is right*

This course includes basic instruction in the mechanics of a camera and techniques in the dark room. It is a beginning course and intended for people who have never taken a picture before in their lives; however, every attempt will be made to allow students who have previous experience 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.

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**HU151 Color Photography (3,1,2)**

This course is a basic color photography experience. Techniques of film development, color printing, and color balance of color prints will be explored. Prerequisite: HU150 or by departmental approval.

**HU185 Special Ensemble I (1,0,2)**

These groups are appropriate for musicians who enjoy performing in small select vocal ensembles. Participants will be selected after successfully auditioning with the 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)**

This course is a continuation of HU185

**HU191 Choir I (1,0,2)**

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)**

This course is a continuation of HU191.

**HU195 Jazz Band I (1,0,2)**

This group is made up of instrumentalists 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)**

This course is a continuation of HU195.

**HU200 Humanities I (4,4,0)**

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)**

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.

**HU215 Music Literature (3,3,0)**

This is a comprehensive course in which selected works by major composers, past and present, are studied. Recordings of various musical forms, including the symphony, concerto, tone poem, opera and chamber music will be used in the class to build a basic listening repertory. The fundamentals of music, including meter signatures, accidentals, treble and bass clefs, note and rest values, and circles of fifths, will be introduced. Students will be expected to attend various concerts throughout the semester.

**HU220 Introduction to Philosophy (3,3,0)**

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.

**HU225 Art for the Elementary Teacher-Lecture and Studio (2,1,2)**

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**

This course places emphasis on exploration of traditional or experimental painting techniques. Prerequisite: HU126.

**HU228 Painting IV(3,1,3) Studio**

This course places emphasis on development of individual expression. Prerequisite: HU227.

**HU232 Ceramics III(3,1,3) Studio**

This course places emphasis on making more complex hand built or wheel thrown forms and learning kiln firing procedures. Prerequisite: HU131.

**HU233 Ceramics IV (3,1,3) Studio**

This course places emphasis on refining forms and developing an understanding of raw materials and glaze formulation. Prerequisite: HU232.

**HU240 American Art Seminar I (1,1)**

In this course, students will read and report orally on major American artists and movements of the 17th, 18th and 19th Centuries. The artists' work will be examined critically in class. Subsequent class discussions will explore the derivations, significances, meanings, and trends evident in their artistic expressions.

**HU241 American Art Seminar II (1,1,0)**

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.

**HU287 Special Ensemble III (1,0,2)**

This course is a continuation of HU186.

**HU288 Special Ensemble IV (1,0,2)**

This course is a continuation of HU287.

**HU293 Choir III (1,0,2)**

This course is a continuation of HU192.

**HU294 Choir IV (1,0,2)**

This course is a continuation of HU293.

**HU297 Jazz Band III (1,0,2)**

This course is a continuation of HU196.

**HU298 Jazz Band IV (1,0,2)**

This course is a continuation of HU297.

## INDUSTRIAL TECHNOLOGY

### **IT100 Machine Tool Operation Theory (2,2.25,0)**

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. Prerequisites: Six months working in a machine shop or basic knowledge of machine tool operations.

### **IT102 Basic CNC Operation (2,2.25,0)**

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 on punched tapes to be used on a machine tool simulator.

### **IT120 Plastics Technology I (2,2.25,0)**

This course is an introduction to the world of plastics—their history, uses, processing, and their future. Also included are composites and adhesives. As a beginning course, the chemistry involved is kept at a practical level.

### **IT130 Metallurgy and Heat Treatment (2,2.25,0)**

Studied in this course are properties of metals and the tests to determine their use, chemical metallurgy, and physical metallurgy, Shaping and forming of metals, non-ferrous alloys, surface treatments, powder metallurgy, and classifications of steels are also included. Students will learn about stress, strain and strength throughout the course.

### **IT155 Industrial Safety and First Aid (2,2.25,0)**

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 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)**

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 a high degree of machine shop skill. Prerequisites: None.

### **IT221 Advanced Machine Operations (3,2,2)**

This course covers advanced operations on grinders, mills, drill 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. Prerequisite: IT220, or experience.

**IT253 Hydraulics and Fluid Mechanics (3,2,2)**

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)**

This is a study of the methods and processes used in manufacturing a product. Individual and group tours of industry along with a survey of technical literature is the basis for the term paper required. Prerequisites: None.

**IT270 Industrial Quality Control (2,2.25,0)**

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)

College writing, with emphasis on exposition and argumentation. Instruction in rhetoric, grammar, punctuation, and documentation.

### LA101 Freshman English II (3,3,0)

This course is to develop the student's ability to analyze the various processes of formal and informal communication and to improve the ability to recognize and utilize effective argumentative and expository prose. (Though this course is a degree requirement, students who achieve a grade of B+ or better in LA100 may substitute a literature course such as LA200, or 201, LA230, LA240, LA270 or LA295). Prerequisite: LA100 or written departmental approval.

### LA160 Journalism (3,3,0)

This is an introduction course which includes the basic techniques of 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)

This course provides practical experience on a newspaper.

### LA162 Journalism Lab II (1,0,2)

Advanced practical experience on a newspaper.

### LA200 American Thought and Literature I (3,3,0)

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)

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)

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 (3,3,1)

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, theatre, speech improvement, and the teaching of literature.



- LA220 English Literature from the Beginning to 1798 (3,3,0)**  
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)**  
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)**  
This is a study of the strengths and limitations of the short story, which the student learns to read with delight and understanding. Prerequisites: In general, this course should be open to students who are willing to work at a sophomore level.
- LA240 The Novel (3,3,0)**  
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)**  
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)**  
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 the present.
- LA261 Drama-As a Performing Art (3,1,2)**  
Students are involved in the producing, acting, staging and directing of plays.
- LA270 Poetry (3,3,0)**  
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)**  
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.
- LA295 Children's Literature (3,3,0)**  
This is a survey of literature for children in the elementary grades, aimed at developing techniques for using books with children, storytelling, and the criteria for book selection.

## **LAW ENFORCEMENT**

### **LE110 Introduction to Criminal Justice (3,3,0)**

This course provides the student with a broad overview of the history and scope of the American Criminal Justice System.

### **LE120 Police Administration and Operations (3,3,0)**

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. Prerequisite: LE110.

### **LE130 Criminal Investigation (3,3,0)**

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. Prerequisite: LE110.

### **LE210 American Criminal Law (3,3,0)**

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.

### **LE220 Juvenile Delinquency (3,3,0)**

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. Prerequisite: LE110.

### **LE230 Introduction to Corrections (3,3,0)**

This course is designed for persons employed in or interested in a career within the broad field of correctional administration. Prerequisite: LE110.

### **LE240 Introduction to Security Systems (3,3,0)**

This course is designed for persons employed in or interested in a career within the broad field of public and private security administration. Prerequisite: LE110.

## MATHEMATICS

### MA100Elementary Algebra (3,3,0)

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.

### MA102Trigonometry (3,3,0)

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. Prerequisites:  $1\frac{1}{2}$  years of high school algebra and 1 year of high school geometry.

### MA104Intermediate Algebra (3,3,0)

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. Prerequisite: MA100 or equivalent.

### MA110Shop Mathematics I (2 credit hours, 36 clock hours)

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.

### MA111Shop Mathematics II (2 credit hours, 36 clock hours)

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. Prerequisite: MA110.

### MA112Shop Mathematics III (2 credit hours, 36 clock hours)

Solid geometric applications, shop trigonometry, and an introduction to the use of computers in design and machining are covered. Prerequisite: MA111.

### MA116Managerial Mathematics (3,3,0)

This is a study of mathematics relating to various business situations involving matrix algebra, systems of equations, linear programming and the simplex method. Prerequisites: MA104 or equivalent.

### MA151Math for Elementary Teachers (3,3,0)

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.

### MA159College Algebra (3,3,0)

Topics include the quadratic equation in two variables, sequences and series, complex numbers, DeMoivre's theorem, synthetic division, mathematical induction, matrices, combinations and permutations. Prerequisites: Students must have taken MA102 or be currently enrolled in MA102.

**MA160 Analytic Geometry (3,3,0)**

This course covers the straight line, the circle conics, algebraic curves, transcendental curves, parametric equations, planes and lines, and quadratic surfaces. Prerequisite: MA159 or equivalent.

**MA190 Elementary Statistics (3,3,0)**

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, hypotheses 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. Prerequisite: One year of high school algebra.

**MA250 Calculus I (4,4,0)**

This course covers functions and continuity, limits differentiation, applications, integration, and the definite integral applications. Prerequisite: MA160.

**MA251 Calculus II (4,4,0)**

This course covers logarithms and exponentials, arc length, polynomials, partial fractions, Taylor's series, special methods of integration, and partial differentiation. Prerequisite: MA250 or equivalent.

## NATURAL SCIENCES

### **NS100 Biological Science (4,3,2)**

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)**

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 the 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)**

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)**

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. Prerequisites: NS100 or science department approval.

### **NS105 Introductory Chemistry (4,3,2)**

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 & biochemistry. (Students working toward a bachelor's degree should take the two-semester college chemistry course--NS220-NS221.

### **NS108 Problem-Solving (3,3,0)**

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 no prior knowledge beyond basic reading, writing, and arithmetic skills.

**NS110 Botany (4,3,2)**

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. Prerequisite: NS100 or a strong background in high school biology.

**NS111 Applied Technical Physics I (3,2,2)**

This is a study of the physical concepts of FORCE, WORK, RATE, and RESISTANCE as they apply to several forms of energy. Prerequisite: MA100 or equivalent. (This course is still under development and will not be scheduled before fall 1985.)

**NS112 Applied Technical Physics II (3,2,2)**

This is a study of the physical concept of POWER, POTENTIAL & KINETIC ENERGY, ENERGY CONVERTERS, VIBRATIONS, and WAVES as they apply to several forms of energy. Prerequisite: NS111. (This course is still under development and will not be scheduled before Spring 1986.)

**NS115 Zoology (4,3,3)**

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. Prerequisite: NS100 or a strong background in high school biology.

**NS201 Microbiology (4,3,2)**

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. Prerequisites: NS100, NS101 or its equivalent. (Equivalent implies a course in general college biology, and/or college zoology and a chemistry course. High school courses in biology and chemistry are to be taken within the last ten (10) years and may be acceptable with written departmental approval.)

**NS203 Anatomy & Physiology II (4,3,2)**

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. Prerequisites: NS103, NS105 or science department approval.

**NS208 Nature Study (4,2,3)**

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)**

Fundamental theories, principles, and problems of chemistry will be emphasized.  
Prerequisites: One year of high school algebra, NS101 or permission from the instructor.

**NS221 College Chemistry II (4,4,3)**

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

**NS230 Introductory Physics I (4,3,2)**

This course is for students interested in the life sciences, e.g., biology, medical technology, pre-med., pre-dent., etc. The course covers concepts of light, force and motion, and energy as they apply to biological mechanism and instrumentation. Prerequisites: high school algebra, college algebra or trigonometry taken concurrently.

**NS231 Introductory Physics II (4,3,2)**

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

## **NURSING**

### **NUR100Nursing Skills I (4,3,2)**

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.

### **NUR101Nursing Skills II (2,1,2)**

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.

### **NUR110Food in Health and Disease (2,2,0)**

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

### **NUR115Clinical Practicum I (3,0,9)**

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 the 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.

### **NUR116Clinical Practicum II (10,0,20)**

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. Prerequisite: Successful completion of NUR115.

### **NUR117Clinical Practicum III (6,0,12)**

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. Prerequisites: Successful completion of NUR115 and NUR116.

### **NUR120Concepts of Interpersonal Relationships (2,2,0)**

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.



**NUR125Nursing Seminar (1,1,0)**

Current trends in nursing related to education, nurse practice acts, and professional organizations will be the focus of this course.

**NUR145Maternal-Child Nursing I (3,3,0)**

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.

**NUR150Introduction to Medical-Surgical Nursing (2,2,0)**

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.

**NUR151Medical-Surgical Nursing II (3,3,0)**

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.

**NUR152Medical-Surgical Nursing III (1,1,0)**

A continuation and review of the previous Medical-Surgical Nursing courses.

**NUR160Pharmacology (2,2,0)**

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.

**NUR200Role Transition (2,2,0)**

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. Prerequisite: Admission to the second year of the nursing program.

**NUR225Leadership Role in Nursing (3,1,4)**

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.

**NUR245Maternal-Child Nursing II (6,2,8)**

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)**

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)**

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. Prerequisites: SS220 General Psychology.

**PN281 Basic Concepts of Pharmacology and the Administration of Medicines (4,4,2)**

(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.

**NUR251 Advanced Medical-Surgical Nursing (10,4,12)**

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.

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

## OFFICE EDUCATION

### OE100 Beginning Typing (3,1,3)

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. Open-lab course.

### OE101 Intermediate Typing (3,0,4)

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. Prerequisite: OE100 or equivalent (40 w.p.m.)

### OE102 Machine Shorthand I (4,3,2)

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. Prerequisite: OE100.

### OE103 Shorthand I (4,3,2)

A course in the elementary principles of Gregg Shorthand. Prerequisite: OE100.

### OE104 Shorthand II (4,2,3)

Intensive training in theory of shorthand, the development of shorthand outlines, and the ability to take new-matter dictation. Prerequisites: OE100 and OE103.

### OE117 Clerical Accounting (3,3,0)

This course, designed primarily for students in a secretarial/clerical program, covers the basic terminology and fundamental principles of accounting. Most of the emphasis is on the practical business application of the materials covered, with major consideration given to the preparation of accounting statements, balance sheet, and income statement.

### \* OE120 Business Mathematics (3,3,1) 336

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)

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. Prerequisite: OE100.

### OE130 Business Communications II (3,3,0)

This is a study of effective correspondence in business. Prerequisites: OE100 and OE129.

**OE175 Records Management (3,0,4)**

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. Prerequisite: OE100.

**OE202 Advanced Typing (3,0,4)**

This course presents continued speed-building techniques, advanced production typewriting techniques, skill in business letters, tabulations, manuscript writing, legal documents, and business forms. Prerequisite: OE101 or equivalent (55 w.p.m.). Open-lab course

**OE203 Advanced Shorthand (4,2,3)**

Further development of the ability to write new-matter dictation with increasing emphasis on speed and accuracy in transcription. Prerequisites: OE101 and OE104.

**OE205 Legal Terminology and Transcription (3,3,1)**

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. Prerequisite: OE101. Open-lab course

**OE206 Legal Office Procedures (3,3,1)**

This is a study of the duties and responsibilities of the legal secretary. Transcription skills using legal terminology are enhanced on various pieces of transcription equipment. The student will complete assignments which include general office duties, non-court documents, and court documents. Open-lab course. Prerequisite: OE101 (OE205 recommended).

**OE207 Medical Terminology (3,3,1)**

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 speciality. Open-lab course.

**OE208 Medical Office Procedures (3,3,1)**

This is a course covering the duties of the medical secretary which involves: bookkeeping, insurance, medical ethics and legal responsibilities, scheduling, and record keeping. Transcription skills using medical terminology are enhanced on various pieces of transcription equipment. Open-lab course. Prerequisite: OE101 (OE107 recommended).

**OE220 Voice Transcription (3,0,4)**

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)**

This is a lecture course which introduces basic concepts, terminology, and the emergence of information processing into the modern office. Spelling, grammar, punctuation, vocabulary, and transcription skills are drawn together in practical application on the Wydec Text Editors. New career paths which have emerged as a result of information processing are also covered. Prerequisite: OE101.

**OE226 Word Processing II (3,0,4)**

Development of increased keyboarding skills on the Lanier word processors and Apple micro computer 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. Prerequisite: OE101, and OE225 (OE220 recommended).

**OE227 Word Processing III (3,0,4)**

Advanced-level concepts and varied office simulations are stressed in this course. In addition to developing machine competency on the NBI shared-resource system and IBM personal computer, students develop the skill of dictating using cassette dictation equipment. Open-lab course. Prerequisite: OE101 and OE225 (OE220 recommended).

**OE230 Office Procedures (3,3,1)**

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. Prerequisite: OE101

**OE240 Business Calculators (3,0,4)**

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. Open-lab course. Prerequisite: OE120.

**OE290 Field Experience (3,0,3)**

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.) Prerequisite: OE206, OE208, or OE230.

## PHYSICAL EDUCATION

**PE101 Golf (1,0,2)**

This course teaches the fundamental techniques of golf.

**PE102 Bowling (1,0,2)**

This course teaches the fundamentals of bowling, which will include equipment selection, stance, approach, delivery, scoring and rules.

**PE103 Personalized Body Conditioning (1,0,2)**

This is a course involving supervised lifting of weights and body conditioning. Two tracks are possible: track one is for weightlifting; track two is a personalized conditioning program involving aerobics for athletes and others.

**PE104 Archery (1,0,2)**

This course is designed to teach the fundamentals of archery. Fundamentals covered include equipment selection, safety procedures, archery games and rounds, and shooting techniques.

**PE105 Sports Fundamentals (1,0,2)**

This course will provide the student with the basic knowledge needed to more fully enjoy watching and participating in volleyball, basketball, softball, racquetball and badminton. The semester will be divided into five sections, with each section dealing with a specific sport. The student will be given a broad overview of each sport, including rules, basic techniques and skills needed to more fully enjoy these sports.

**PE107 Cross Country Skiing (1,0,2)**

The students will learn the fundamental principles of cross country skiing. This will include proper equipment selection, use and maintenance. The primary learning process will be via skiing in the field.

**PE108 Social Dancing (1,0,2)**

This course will teach the student basic steps in modern social dancing (swing, foxtrot, cha-cha, waltz, disco, etc.) and the courtesies necessary for developing poise and confidence on the dance floor.

**PE109 Folk Dancing (1,0,2)**

This is a general course designed to develop skills and techniques in the various country and folk dances.

**PE110 Introduction to Physical Fitness (1,1,0) 3**

This course will provide the student with a generalized overview of physical fitness. The course will bring together terms often seen in print separately but seldom explained in relationship to each other, words such as: cardiovascular, aerobics, stress, cholesterol, nutrition, lifetime sports and others. Students will assess their own fitness level and develop individualized lifelong plans for improved health.

**PE111 Karate I (1,0,2)**

This course is designed to teach the student the basic kicks, punches, and blocks of karate.

**PE112 Karate II (1,0,2)**

This is a continuation of PE111. Students completing this course will be encouraged to attempt the tests for their lower degree belts.

**PE115 Personal Self-Defense (1,0,2)**

This course teaches the student basic methods of self-defense as well as avoiding personal dangers. Karate is the primary method used for the self-defense portion of the class.

**PE116 Racquetball (1,0,2)**

This course teaches the student the fundamental skills needed to play racquetball for fun and physical conditioning.

**PE118 Bicycling (1,0,2)**

This course teaches the student how to select, adjust, maintain, and use equipment properly. The student will also learn safety and riding techniques. Students are expected to log 150 to 200 miles during the semester.

**PE119 Beginning Tennis (1,0,2)**

This course teaches the basic skills of tennis, including serve, forehand and backhand ground strokes. Students will also learn the rules and strategy of the game. A class tournament will be held during the last week of the class.

**PE120 Intermediate Tennis (1,0,2)**

This course further refines the skills (ground strokes, serving, volleying) and knowledge (rules, strategies, and techniques of participation) of the beginning tennis player. Prerequisite: PE119 or equivalent.

**PE121 Sports Officiating (1,0,2)**

This course presents the rules of major sports, officiating techniques, relationship with players and school officials and game administration. Major emphasis is to stimulate students into becoming registered officials with the State Association.

**PE122 Beginning Skiing (1,0,2)**

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)**

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 and styles. Ski maintenance and technical information on skis and bindings will be studied also.

**PE124 Advanced Skiing (1,0,2)**

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)**

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)**

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. Prerequisite: PE130 or equivalent.

**PE133 Advanced Lifesaving and Water Safety (1,0,2)**

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. Prerequisite: PE130, PE131, or equivalent.

**PE134 Water Safety Instructors Certification (1,0,2)**

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. Prerequisites: PE131, PE133 and certificate.

**PE135 Skin and Scuba Diving (2,1,2)**

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)**

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.

## STUDENT DEVELOPMENT

### **SD100 Human Potential (1,0,1)**

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)**

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)**

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)**

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)**

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)**

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)**

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)**

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)**

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)**

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)**

This course is designed for students who have successfully completed SD152 and wish to develop more sophisticated reading skills.

**SD156 Practical Approaches to Efficient Study (2,2,0)**

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. This course will be offered in the Prison Extension Program only because on-campus students may enroll in Developmental Reading to acquire these skills.

**SD158 Efficient Reading (1,0,1)**

This course is designed to enable the 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 use of context. Individual growth in rate and comprehension will be measured by the use of timed pre and post tests. Prerequisites: None, though average or better reading skills are recommended.

**SD160 Developmental Mathematics I (1,0,1)**

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)**

This course is available to students who have successfully completed SD160 and would like to continue developing basic arithmetic skills.

**SD162 Developmental Mathematics III (1,0,1)**

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 consumer applications of basic mathematics, exponential notation, square roots, signed numbers, plane geometry, and solving equations.

**SD163 Developmental Mathematics IV (1,0,1)**

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)**

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. Prerequisites: None. Basic Writing Skills may be taken concurrently with or in preparation for LA100.

**SD175 Improving Reading & Writing (3,3,0)**

This course offers the student an opportunity to improve communication skills in both reading and writing. Throughout the course, the relationships between good writing and reading for comprehension will be stressed. Emphasis will be placed on grammar, sentence structure, vocabulary development, spelling and paragraph construction. Prerequisite: None

**SD250 Travel Seminar (1,1,0)**

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)**

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)**

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.

### **SS120 Michigan History (3,3,0)**

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.

### **SS140 Introduction to Corrections (3,3,0)**

This is an examination of the total correction process from law enforcement through the administration of justice, probation, prisons, and correctional institutions. (Normally offered only at the prison extensions.)

### **SS145 Corrections Practicum (4,4,0)**

This course incorporates several aspects of the corrections process including the role of the practitioner, social and psychological aspects of the client, and other important information related to correctional work. (Available only through the Department of Corrections.)

### **SS150 Contemporary World Geography (3,3,0)**

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)**

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, stabilization, growth, employment, and taxes.

**SS220 General Psychology (3,3,0)**

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)**

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)**

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)**

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)**

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 beyond the traditional examinations of government institutions (the executive, the legislature, the 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 the American political system, while emphasizing the strengths and positive 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)**

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, political, and economic institutions, special emphasis is placed on 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: America 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)**

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; industrialization, labor, and the rise of capitalism, imperialism and world 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.

**SS258 Sex in History (3,3,0)**

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)**

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 I (3,1,4)**

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 and dimensioning.

### **TD105 Blueprint Reading (2, .5,1.75)**

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, and assembly dimensions.

### **TD106 Layout and Precision Measurement (2,.5,1.75) (formerly Blueprint Reading II)**

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, weldment assembly, and metrics. The student will be required to check manufactured parts against part prints, with precision measuring devices. Prerequisite: TD105 or permission from the instructor.

### **TD110 Descriptive Geometry (3,1,4)**

A laboratory/lecture course consisting of projection of lines, surfaces, planes, revolution of objects, intersection of planes and solids, and sheet metal layouts. Prerequisites: TD100 or equivalent

### **TD120 Shop Drawing (2,.5,1.75)**

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 charts and graphs is also included.

### **TD130 Technical Drafting II (3,1,4)**

A laboratory/lecture course including isometric, oblique and perspective projection, welding drawings, roughness symbols and fastening devices.

### **TD135 Tool and Die Design-Metal I (2,.5,1.75)**

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-Metal II (2,.5,1.75)**

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 will learn various types of presses, which will include one or two field trips to facilities, to observe and review various sheet-metal presses. Students will be required to research and write a report on one type of press, as an outside class project. Students must maintain notebooks. These will be reviewed by the instructor at the end of the course and returned for future reference. Prerequisite: TD135

**TD137 Tool and Die Design-Metal III (2,.5,1.75)**

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 pierce and form dies, pilot pins, drawing 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. Prerequisite: TD136.

**TD140 Plastic Mold Design I (2,.5,1.75)**

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)**

This is a continuation of TD140 which is a prerequisite.

**TD142 Plastic Mold Design III (2,.5,1.75)**

This is a continuation of TD141 which is a prerequisite.

**TD230 Jig and Fixture Design (3,1,4)**

The following topics are covered in the laboratory/lecture course: Drill jigs with various types of locating devices, drill bushings, clamping devices, locating pins, milling and tapping fixtures.

**TD250 Computer Aided Drafting (CAD) (3,2,2)**

This course consists of computer-generated graphics to include: terminology, techniques and application of computer aided drafting, to engineering, tool design, architecture, and electronics. Two-dimensional design drafting is stressed. Four hours lecture/laboratory combination. Prerequisites: TD100 or equivalent. Corequisites: TD130 or experience suitable to the instructor.

## WELDING TECHNOLOGY

### **WE105 Beginning Welding (2,1,2)**

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)**

This is a running mate with WE105. During this second eight-week course, the 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)**

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. (Projects from home are encouraged.)

### **WE108 Welding and Fabrication I (3,1,3)**

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 Light Gauge Welding (2,1,2)**

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. Prerequisite: None

### **WE115 Metal Sculpture (2,1,2)**

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. Prerequisite: WE100

### **WE120 Welding and Fabrication II (3,1,3)**

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)**

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 in T.I.G. and M.I.G. procedures. Prerequisites: WE105, WE106.

### **WE122 Related Welding Skills (3,1,3)**

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 & Construction Welding (1,.5,1.5)**

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. Prerequisite: None

**WE125 TIG Welding (2,.5,1.75)**

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

### XY299 Directed Studies (1 or 2 credit hours)

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 an 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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Drafting Technology  
Nursing Education  
Social Science  
Nursing Education  
Counselor  
Mathematics  
Humanities (Art)  
Automotive Mechanics  
Business Administration  
Nursing Education  
Food Service Technology  
Automotive Mechanics  
Counselor  
Counselor  
Social Science  
Business Administration  
Social Science  
Language Arts  
Nursing Education  
Natural Science  
Developmental Studies  
Natural Science  
Office Education

## MONTCALM COMMUNITY COLLEGE CALENDAR

### Summer, 1985

June 10 - August 2

### Fall, 1985

August 22 and 23  
August 24  
September 2  
November 28 and 29  
December 18

Conference days  
Classes begin  
Labor Day  
Thanksgiving recess  
Classes end

### Spring, 1986

January 9 and 10  
January 11  
March 23 - March 30  
May 9  
May 9  
May 13

Conference days  
Classes begin  
Spring break  
Classes end  
Graduation  
Conference day

### Summer, 1986

June 9 - August 1 (Tentative)

### Fall, 1986

August 22 and 23  
August 24  
September 2  
November 28 and 29  
December 18

Conference days  
Classes begin  
Labor Day  
Thanksgiving recess  
Classes end

### Spring, 1987

January 8 and 9  
January 10  
March 22 - 29  
May 8  
May 8  
May 11

Conference days  
Classes begin  
Spring break  
Classes end  
Graduation  
Conference day

### Summer, 1987

June 8 - July 31 (Tentative)