FULTON-MONTGOMERY COMMUNITY COLLEGE

A UNIT OF THE
STATE UNIVERSITY OF NEW YORK

JOHNSTOWN, NEW YORK

Catalogue 1974-1975

DEGREE PROGRAMS

LIBERAL ARTS (A.A.)
Humanities and
Social Sciences

This program is designed primarily for those students who plan to transfer to other colleges in programs leading to their Bachelor's degree. This program should be followed by students interested in advanced study in humanities and social sciences, or in teacher education programs leading to certification by New York State.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
Social Science Elective	3	Social Science Elective	3
Foreign Language	3	Foreign Language	3
Mathematics or Science	3-4	Mathematics or Science	3-4
Elective	3-4	Elective	3-4
Physical Education	1	Physical Education	1
	16-18		16-18

SECOND YEAR

First Semester		*Second Semester*	
Literature Elective	3	Literature Elective	3
Social Science Elective	3	Social Science Elective	3
Foreign Language or Elective	3-4	Foreign Language or Elective	3-4
Mathematics or Science	3-4	Mathematics or Science	3-4
Elective	3-4	Elective	3-4
	15-17		15-17

All students must complete 12 semester hours of English (EN 125, 126, plus six semester hours of literature, 12 semester hours in social science courses, a minimum of 6 semester hours in each of the following: foreign languages, mathematics, science, and, 2 semester hours of physical education, and additional electives to a total of 62 semester hours. At least 48 semester hours must be selected from the area of liberal arts and sciences.

LIBERAL ARTS (A.A.)

Fine Arts (Art, Drama, Music, Theater) Option

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
Social Science elective	3	Social Science elective	3
Foreign language	3	Foreign language	3
Fine Arts elective	3	Fine Arts elective	3
Mathematics or Science elective	3-4	Mathematics or Science elective	3-4
Physical Education	1	Physical Education	1
	16-17		16-17

SECOND YEAR

First Semester		*Second Semester*	
Literature elective	3	Literature elective	3
Social Science elective	3	Social Science elective	3
Mathematics or Science elective	3	Mathematics or Science elective	3
Fine Arts electives	6	Fine Arts elective	3
	15	Fine Arts seminar	3-4
			15-16

All students must complete 12 semester hours of English (EN 125, 126, plus six semester hours of literature, 12 semester hours in social science courses, a minimum of 6 semester hours in each of the following: foreign languages, mathematics, science, and 2 semester hours of physical education, and additional electives to a total of 62 semester hours. At least 48 semester hours must be selected from the area of liberal arts and sciences.

ENGINEERING SCIENCE (A.S.)

The Engineering Science program is designed for students who plan to transfer and continue their studies towards a Bachelor's degree in engineering or related areas. The Engineering Science program at Fulton-Montgomery Community College provides its graduates the basic science, mathematics, and humanities preparation needed for success in the third year at four-year engineering colleges where specialization in several fields of engineering, applied mathematics, or applied science may be undertaken. The program exposes its students to analytical investigation in the classroom as well as practical experience in the laboratory. Interest and motivation of the student are of paramount importance to be successful in the program. A strong background in high school mathematics and some exposure to high school physics are helpful to give a good start in the program.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
MA 157 Calculus	4	MA 158 Calculus	4
CH 173 Chemistry	4	CH 174 Chemistry	4
PH 171 Physics	4	PH 172 Physics	4
PE Physical Education	1	PE Physical Education	1
	16		16

SECOND YEAR

First Semester		*Second Semester*	
MA 257 Calculus	4	MA 258 Differential Equations	4
PH 235 Mechanics	3	PH 236 Mechanics	3
PH 271 Physics	4	Social Science Elective	3
Social Science Elective	3	*Elective	3-4
*Elective	3-4		13-14
	17-18		

*Elective should be selected to conform to the program requirements of the institution to which the student plans to transfer. DP 120 Computer Programming is recommended for all engineering majors. BI 171, Modern Biology, and BI 173, Animal Biology are recommended for those planning to major in any field of engineering in biosystems.

LIBERAL ARTS (A.S.)
Health Education Option

This program is designed for students who plan to transfer and continue their studies leading to the Bachelor's degree in Health Education. Preparation or advanced studies in Health Education can be initiated from this program.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
Social Science	3	Social Science	3
Science or Math	3-4	Science or Math	3-4
HE 135 Personal Health	3	HE 136 Safety & First Aid	3
PE 201 Introduction to H.P.E.R.	3	Elective	3
PE Activity	1	PE Activity	1
	16-17		16-17

SECOND YEAR

First Semester		*Second Semester*	
SS 291 General Psychology	3	Social Science Elective	3
BI 181 Anatomy & Physiology	4	BI 182 Anatomy & Physiology	4
Humanities Elective	3	Humanities Elective	3
HE 235 Community Health	3	Health Elective	3
Elective	3	Elective	3
	16		16

Sixty-four semester hours are required for an Associate in Science degree including not more than two semester hours of physical education.

The liberal arts requirements are: En 125, EN 126, plus six additional semester hours in humanities; SS 291, plus nine additional semester hours in social science; and BI 181, BI 182 plus six additional semester hours in science and/or mathematics.

LIBERAL ARTS (A.S.)
Mathematics and Science

This program is designed for students who plan to transfer and continue their studies in programs leading to a Bachelor's degree with particular emphasis on advanced study in the sciences and mathematics.

Preparation for the professional fields of medicine and dentistry as well as teaching science and mathematics on the elementary and secondary levels can be initiated with this program.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
*Social Science Elective	3	*Social Science Elective	3
Foreign Language	3	Foreign Language	3
Mathematics	3-4	Mathematics	3-4
Science	3-4	Science	3-4
Physical Education	1	Physical Education	1
	16-18		16-18

SECOND YEAR

First Semester		*Second Semester*	
Mathematics	3-4	Mathematics	4
Science	3-4	Science	3-4
Foreign Language or Elective	3	Foreign Language or Elective	3
Electives	6	Electives	6
	15-17		16-17

All students must submit for graduation a total of 63 semester hours including 12 semester hours in the humanities (EN 125 and EN 126 and 6 semester hours of a foreign language), six semester hours of social sciences, four courses in mathematics, four courses in sciences, and 2 semester hours of physical education. At least 48 semester hours must be drawn from the liberal arts and sciences.

*Social science electives may be postponed until the second year.

LIBERAL ARTS (A.S.)
Physical Education Option

This program is designed for students who plan to transfer and continue their studies leading to the Bachelor's degree in Physical Education. Preparation for advanced studies in Physical Education can be initiated from this program.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
Social Science	3	Social Science	3
Science or Math	3-4	Science or Math	3-4
HE 135 Personal Health	3	HE 136 Safety & First Aid	3
PE 201 Introduction to H.P.E.R.	3	PE 250 Lifetime Sports Series	2
PE Elective 140 or 160 Series	1	PE Elective 140 or 160 Series	1
	16-17		15-16

SECOND YEAR

First Semester		*Second Semester*	
SS 291 General Psychology	3	Social Science Elective	3
BI 181 Anatomy & Physiology	4	BI 182 Anatomy & Physiology	4
Humanities Elective	3	Humanities Elective	3
Elective	3	H.P.E.R. Elective	6-8
PE 241 General Aquatics for P.E. Majors	1		16-18
PE 250 Lifetime Sports Series	2		
	16		

Sixty-three semester hours are required for graduation, including not more than 2 semester hours of physical education. (PE 140 or 160 Series).

Liberal arts requirements are EN 125, EN 126 plus six additional semester hours in humanities; SS 291, plus nine additional semester hours in social science; and BI 181, BI 182, plus six additional semester hours in science and/or mathematics.

All Physical Education majors will earn four (4) participations credits. These will be earned through Divisional counseling.

ACCOUNTING (A.A.S.)

The accounting program provides the basic principles and procedures which are readily applicable to the problems students will meet in the business world of accountants and cost analyst trainees in numerous areas such as industry, finance, insurance, banking and government on the junior-management level.

The following is a suggested sequence of courses:

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
BU 101 Principles of Business	3	SS Social Science Elective	3
BU 111 Mathematics of Business Finance	3	MA *Mathematic Elective	3-4
BU 121 Principles of Accounting	3	BU 122 Principles of Accounting	3
Elective	3	EC 180 Intro. to Economics	3
		PE Physical Education	1
	15		16-17

SECOND YEAR

First Semester		*Second Semester*	
BU 221 Intermediate Accounting	3	BU 222 Intermediate Accounting	3
BU 271 Business Law	3	BU 224 Cost Accounting	3
DP 110 Intro. to Data Processing	3	Liberal Arts Elective	3
SC Science Elective	3-4	Electives	6
PE Physical Education	1		
Elective	3		
	16-17		15

A total of 62 semester hours are required to complete the program which must include a minimum of 15 semester hours of accounting courses. There is a minimum of 20 semester hours from liberal arts and sciences which must include EN 125, EN 126; three semester hours in the social sciences; three semester hours of mathematics other than business mathematics; three semester hours of science; three semester hours in economics, and an additional course in the liberal arts and sciences. Two semester hours of physical education are also required.

*It is strongly recommended that more than one mathematics course be taken in this program.

AUTOMOTIVE TECHNOLOGY (A.A.S.)

The Automotive Technology program is designed to produce persons who, in addition to being knowledgeable in their chosen field, will have a basic background in the arts and sciences. The automotive field is constantly in flux, creating widespread employment and career opportunities.

FIRST YEAR

First Semester		*Second Semester*	
AT 121 Theory of Internal Combustion Engines	3	AT 123 Auto Body Fundamentals	3
AT 122 Introduction to Automotive Function	3	AT 124 Metals and Industrial Processes	3
MA* Math	3-4	EN 126 Freshman English	3
PH 161 Physics	4	MA Math (as advised)	3-4
EN 125 Freshman English	3	PH 162 Physics	4
PE Physical Education	1	PE Physical Education	1
	17-18		17-18

SECOND YEAR

First Semester		*Second Semester*	
AT 125 Automotive Fuel Systems	3	AT 127 Performance Problems Analysis	6
AT 126 Automotive Electrical Systems	3	AT 128 Retail Automotive Service	3
SS Social Science	3	Elective	3
**Elective		Elective	3
***Electives	4-6		
	13-15		15

*Terminal students should consider MA 141-142; Transfer students consult with advisor

**Suggested Elective HD 100 or HD 150 or HD 221

***Suggested Electives BU 141, BU 121, BU 111, EL 125, MD 171.

Minimum of 62 semester hours required for graduation, including not more than two hours of physical education.

BUSINESS ADMINISTRATION (A.A.S.)

The Business Administration Program is designed to provide not only an exposure to various areas of business-related operations, but it also allows for concentration as desired in Retailing, Mid-management, General Finance, or Basic Business. The selected course concentration provides a foundation for middle-management positions in the field of insurance, retailing, marketing, banking, civil service, finance, sales and administrative management in various types of organizations.

The following is a suggested sequence of courses:

FIRST YEAR

First Semester		*Second Semester*	
BU 101 Principles of Business	3	EN 126 Freshman English	3
BU 111 Mathematics of Business Finance	3	BU 122 Principles of Accounting	3
BU 121 Principles of Accounting	3	SS Social Science Elective	3
EN 125 Freshman English	3	MA Math Elective	3
EC Introduction to Economics	3	Elective	3
		PE Physical Education	1
	15		16

SECOND YEAR

First Semester		*Second Semester*	
SC Science Elective	3	Liberal Arts Elective	3
BU *Course Option	6	BU *Course Option	6
**Elective	6	**Elective	6
PE Physical Education	1		
	16		15

*Business Administration majors must take *four* courses in *one* of the following areas of concentration.

Retailing Option
BU 140 Salesmanship
BU 150 Retailing
BU 241 Marketing
BU 252 Retail Management
DP 110 Introduction to Data Processing

Management Option
BU 151 Personnel Management
BU 152 Production Management
BU 272 Management & Law
BU 250 Management Decision Making
DP 110 Intro. to Data Processing

General Finance Option
BU 160 General Finance
BU 164 Credit Administration
BU 165 Small Business Administration
BU 220 Managerial Accounting
DP 110 Intro. to Data Processing

Basic Business Option
BU 115 Business Statistics
BU 261 Advertising
BU 271 Business Law
BU 290 Organizational Behavior
DP 110 Intro. to Data Processing

Sixty-two hours are required to complete this program which must include a minimum of 20 semester hours in liberal arts and science (this includes those specified above).

Students planning to transfer should select their liberal arts and sciences to meet the requirement of the four-year institutions which they plan to attend.

BUSINESS DATA PROCESSING (A.A.S.)

The Data Processing program provides the basic principles and procedures which are readily applicable to the problems students will encounter in the areas of programming and system analysis within computer installations in the business world.

The following is a suggested sequence of courses.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
MA 151 Intermediate Algebra for College Students	3	BU 115 Business Statistics	3
SS Social Science Elective	3	BU 121 Principles of Accounting	3
BU 101 Principles of Business	3	DP 112 Computer Programming (BAL)	3
DP 111 Computer Concepts	3	Liberal Arts Elective	3
PE Physical Education	1		
	16		15

SECOND YEAR

First Semester		*Second Semester*	
BU 122 Principles of Accounting	3	BU 224 Cost Accounting	3
DP 120 Computer Programming (FORTRAN) or DP 121 Computer Programming (COBAL)	3	SC Science Elective	3-4
Electives	6	DP * Data Processing Elective	6-7
MA 121 Mathematics	1	Elective	3
MA 122 Requirement	1		
MA 123	1		
PE Physical Education	1		
	16		15-17

A total of 62 semester hours are required to complete the program which must include a minimum of 15 semester hours of data processing courses. A minimum of 20 hours from liberal arts and sciences is required which must include: EN 125, EN 126, three semester hours in the Social Sciences; three semester hours of science; MA 151 and MA 121, 2, & 3. (MA 151 or equivalent, is pre-requisite for MA 121, 2, & 3). Two semester hours of physical education are also required.

*With the election of DP 130, an extra summer session may be necessary.

CONSTRUCTION TECHNOLOGY (A.A.S.)

The Construction Technology Curriculum is designed to prepare technicians to secure gainful employment with contractors, engineers, architects, public works departments, and material manufacturers. The technical education offered in this curriculum contains a well-designed balance of theories and laboratory studies, providing a graduate with a broad knowledge of the civil engineering and construction fields. This training provides the theoretical and technical background which will enable a person to progress to advanced technical and supervisory positions in the industry.

FIRST YEAR

First Semester	
CT 121 Introduction to Building Trades and Construction Materials	3
CT 122 Light Frame Construction	3
MD 171 Engineering Graphics	3
EN 125 Freshman English	3
**MA Math	3-4
PE Physical Education	1
	16-17

Second Semester	
CT 124 Masonry, Concrete and Steel Construction	3
CT 125 Construction Equipment	3
MD 180 Architectural Drafting and Blueprint Reading	3
EN 126 Freshman English	3
**MA Math (as advised)	3-4
PE Physical Education	1
	16-17

SECOND YEAR

First Semester	
CT 126 Plumbing and Climate Control	3
CT 127 Construction Project & Design I	3
EL 121 Electricity I	4
SS Social Science Elective	3
*Elective	3
	16

Second Semester	
CT 128 Construction Estimating	3
CT 129 Electrical Wiring	3
CT 130 Construction Project & Design II	3
SS Social Science Elective	3
*Elective	3
	15

*Suggested Electives HD 100 or HD 150 or HD 221

*Strongly suggested-BU 271 (Business Law)

*Suggested Electives: BU 111, BU 121, BU 141, PH 171, PH 172, SU 101

**Terminal students should consider MA 141-142

Transfer students consult with advisor

A minimum of 63 semester hours are required for an Associate in Applied Science degree, including no more than 2 semester hours of physical education.

ELECTRICAL TECHNOLOGY (A.A.S.)

This program is designed for those students who plan to seek employment after two years at Fulton-Montgomery Community College as laboratory technicians, electrical draftsmen, engineering assistants and service technicians. An interest in electricity and electronics and a degree of manual dexterity are assets.

Pre-requisite: High school algebra. Trigonometry and physics are desirable.

FIRST YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
EL 125 Electricity	4	EL 126 Electricity	1
MA 161 Mathematics for Electrical Technology	4	EL 127 Instrumentation	1
PH 161 Physics	4	EL 128 Electrical Devices	2
Physical Education	1	EL 235 Instrumentation	1
		MA 162 Mathematics for Electrical Technology	4
		PH 162 Physics	4
		Physical Education	1
	16		17

SECOND YEAR

First Semester		*Second Semester*	
EL 229 Electronics	5	EL 230 Electronics	5
EL 231 Electric Machines	3	EL 232 Computers	4
EL 233 Laboratory Project	3	EL 234 Laboratory Projects	3
Social Science Elective	3	Social Science Elective	3
MD 176 Electrical Graphics	3		
	17		15

A total of 64 semester hours are required for graduation, including not more than two semester hours in physical education.

FOOD SERVICE ADMINISTRATION (A.A.S.)

The Food Service Administration curriculum is designed to develop students with the technical competence and preparation for supervisory trainee positions in the food processing and restaurant industries.

FIRST YEAR

First Semester		*Second Semester*	
BI 121 Nutrition	3	FS 124 Quantity Food Selection and Preparation	3
FS 222 Food Selection and Preparation	3	SC or MA Science or Math	3-4
EN 125 Freshman English	3	EN 126 Freshman English	3
SC or MA Science or Math	3-4	BI 122 Advanced Nutrition	3
FS 123 Introduction to Food Service	3	BU 121 Accounting	3
PE Physical Education	1	PE Physical Education	1
	16-17		16-17

SECOND YEAR

First Semester		*Second Semester*	
FS 126 Diet Therapy	3	HE 235 Community Health	3
FS 127 Food Service Equipment	3	SS Social Science Elective	3
SS Social Science Elective	3	FS 129 Quality Foods Selection	3
FS 128 Food Purchasing and Cost Control	3	FS 130 Food Service Organization and Preparation Management	3
*BU Business Electives	3	*Elective	3
	15		15

*Suggested Electives BU 111, BU 122, BU 141

*Suggested Elective HD 100 or HD 150 or HD 221

A minimum of 62 semester hours are required for an Associate in Applied Science degree, including no more than 2 semester hours of physical education.

NATURAL RESOURCES CONSERVATION (A.A.S.)

The Natural Resources Conservation curriculum is designed to provide students with the educational background required to actively seek employment from governmental and private agencies in the areas of lands, parks and wildlife management. The program is also designed to develop the flexibility to allow students to transfer to schools offering baccalaureate degrees in the area of conservation.

FIRST YEAR

First Semester		*Second Semester*	
NR 121 Fisheries and Wildlife Management	3	NR 122 Fisheries and Wildlife Management	3
EN 125 Freshman English	3	EN 126 Freshman English	3
**MA Math	3-4	SS Social Science Elective	3
BI 171 Modern Biology or SC 141 Introduction to Biology	3-4	BI 172 Plant Biology or BI 173 Animal Biology	4
PE 235 Outdoor Recreation	3	BI 176 Ecology	3
PE Physical Education	1	PE Physical Education	1
	16-18		17

SECOND YEAR

First Semester		*Second Semester*	
NR 123 Forest Managment	3	NR 125 Outdoor Power Equipment	3
NR 124 Principles of Soils and Water	3	NR 126 Research Seminar in Environmental Conservation and Outdoor Recreation	3
SC 143 Earth Science	3	SC 144 Earth Science	3
PE 231 Camping	3	BU 142 Business Organization and Management	
SS Social Science *Elective	3	*Elective	3
	15		15

*Suggested elective BI 172, BI 173, HE 135, HE 136, HD 150

**Terminal students should consider MA 141-142-143; Transfer students consult with advisor

A minimum of 63 semester hours are required for an Associate in Applied Science, including no more than 2 semester hours of physical education.

NURSING (A.A.S.)

The Nursing Science Program offers a four-semester curriculum which provides a balance of Liberal Arts and nursing as illustrated below. The nursing courses provide theoretical knowledge combined with clinical experience in a variety of hospital settings and community agencies. Graduates of this program are prepared to take the New York State licensing examinations to become Registered Nurses (R.N.) and are qualified to assume beginning staff nurse positions in five major clinical areas: Medical, Surgical, Maternity, Pediatric and Psychiatric Nursing.

Prerequisites: High School Biology, medical examination, evaluation of scores on standardized tests (such as R.S.E., S.A.T., S.U.A.E.). Algebra and chemistry are desirable.

Because of the large number of applications to the Nursing Program, it is recommended that applications for

admission be on file by January 1. The final date for receipt of application is listed in the College calendar. A minimum grade of C is required in nursing courses and a passing grade in the clinical laboratory is necessary to proceed to the next sequential nursing course.

FIRST YEAR

First Semester		*Second Semester*	
BI 181 Anatomy & Physiology	4	EN 125 Freshman English	3
SS 291 General Psychology	3	BI 182 Anatomy & Physiology	4
NU 105 Nursing Science	7	SS 297 Developmental Psychology	3
Physical Education	1	NU 106 Nursing Science II	7
	15	Physical Education	1
			18

SECOND YEAR

First Semester		*Second Semester*	
BI 282 Microbiology	4	NU 206 Nursing Science IV	9
NU 205 Nursing Science III	9	SS 281 Sociology	3
EN 126 Freshman English	3	Elective	3-4
	16		15-16

A minimum of 64 credits is required for graduation including not more than two semester hours of physical education.

SECRETARIAL SCIENCE (A.A.S.)

The Secretarial Science Program provides the necessary foundation for positions as secretaries, stenographers, and receptionists in business, government and industry.

The following is a suggested sequence of courses:

FIRST YEAR

First Semester		*Second Semester*	
*BU 133 Beginning Typewriting		BU 132 Shorthand	5
and/or		BU 137 Business Communications	3
BU 134 Intermediate Typewriting	3	BU 144 Data Processing Manual	3
**BU 131 Shorthand	5	LA Elective	3
or		LA Elective	3
BU 138 Shorthand Skills	1		17
SS Elective	3		
MA Elective	3		
PE Elective	1		
	15-17		

SECOND YEAR

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
BU 231 Shorthand and Transcription	4	BU 232 Shorthand and Transcription	4
BU 235 Secretarial Procedures	3	BU 236 Secretarial Procedures	3
SC Elective	3	BU 234 Advanced Typewriting	3
PE Elective	1	BU Elective	3
	14		16

* Depending on preparation.

* * Depending on preparation. If student is taking BU 131, then student should be scheduled for 3 other academic courses plus PE. If student is taking BU 138, then 5 other academic courses plus PE should be scheduled.

VISUAL COMMUNICATIONS TECHNOLOGY (A.A.S.)

The Visual Communications Technology curriculum is designed to prepare technicians to secure employment in the graphics communications industry. Emphasis will be in the areas of layout and design, photo composition, paste-up and copy preparation, camera work, stripping, offset platemaking, presswork, and related areas. Special emphasis is on the development of contemporary job skills in most production areas where skill-building activities in offset, lithographic, and screen process printing are needed.

Technical knowledge of science-oriented areas such as chemistry, electronics, mathematics, and photography is developed. A balance of broad technical background through practical application and theory will enable a person to advance to supervisory positions in printing and publishing of newspapers, magazines, books, and advertising matter; the production of business forms; greeting cards; gift wrappings; commercial or job printing; bookbinding; and other printing and photographic services.

FIRST YEAR

First Semester		*Second Semester*	
GA 101 Graphic Arts I	3	GA 103 Graphic Arts II	3
GA 102 Visual Communications	3	GA 104 Typography	3
EN 125 English	3	EN 126 English	3
MA Mathematics	3-4	MA Mathematics	3-4
CH 173 Chemistry	4	SC Elective	4
PE Physical Education	1	PE Physical Education	1
	17-18		17-18

SECOND YEAR

First Semester		*Second Semester*	
GA 105 Layout and Printing Design	3	GA 107 Production Management	3
GA 106 Graphic Arts Production	3	GA 108 Seminar	3
EC Consumer Economics	3	BU or AR, Electives in Business or	
HD Elective	3	Fine Arts, or 1 each	6
SS Elective	3	SS Elective	3
	15		15

VISUAL COMMUNICATIONS TECHNOLOGY (A.A.S.)

Photography Option

FIRST YEAR

First Semester		*Second Semester*	
GA 101 Graphic Arts I	3	GA 103 Graphic Arts II	3
GA 102 Visual Communications	3	ER 101 Principles of Photography	3
CH 173 Chemistry	4	EN 126 English	3
EN 125 English	3	MA Mathematics	3-4
MA Mathematics	3-4	SC Elective	4
PE Physical Education	1	PE Physical Education	1
	17-18		17-18

SECOND YEAR

First Semester		*Second Semester*	
GA 106 Graphic Arts Production	3	ER 103 Commercial Photography	3
ER 102 Advanced Photography	3	ER 104 Seminar in Photography	3
EC Consumer Economics	3	BU or AR, 2 Electives in Business or	
HD Elective	3	Fine Arts, or 1 each	6
SS Elective	3	SS Elective	3
	15		15

ONE-PLUS-ONE PROGRAMS

Fulton-Montgomery Community College, in cooperation with the State University Agricultural and Technical College at Cobleskill, offers "one plus one" programs in the following areas:

Science Laboratory Technology (Environmental Health Concentration)

Science Laboratory Technology (Allied Health Concentration)

Food Service Administration

Floriculture and Nursery Management

In this type of program, a student spends his first year at Fulton-Montgomery taking prescribed courses in the program of his choice. Upon successful completion of this first year, transfer to Cobleskill in that program is guaranteed, and the final year of study is done at Cobleskill.

The following specific points should be noted:

A. Cobleskill will guarantee transfer and accept full credit if the student takes the appropriate program of courses at Fulton-Montgomery, and if he is in good academic standing as defined by Fulton-Montgomery (a cumulative average of 1.75) at the end of the second semester.
B. A second application to Cobleskill will not be necessary. Records will be forwarded from Fulton-Montgomery.
C. The student's cumulative grade-point average at the end of two years will be based upon the combined work performed at Fulton-Montgomery and Cobleskill. A 2.00 cumulative average is minimum for receipt of a degree.
D. Housing for students successfully completing their first year will be available in th dormitories at Cobleskill.
E. Demands for the graduates of the Food Administration Program and Floriculture and Nursery Management exceed the supply, and both Science Laboratory Technology Programs have excellent transfer capability.

One-plus-one arrangements are in effect with Hudson Valley Community College, Mohawk Valley Community College, and Schenectady County Community College in Criminal Justice.

After completing Fulton-Montgomery Community College's one-year program, an individual will be admitted as a second-year student in their respective degree program.

SCIENCE LABORATORY TECHNOLOGY - A.A.S.

Environmental Health Concentration

FIRST YEAR — FULTON-MONTGOMERY COMMUNITY COLLEGE

First Semester	
EN 125 Freshman English	3
CH 173 Fundamentals of Chemistry I	4
BI 171 Modern Biology	4
Math Elective	3-4
Physical Education	1
	15-16

Second Semester	
EN 126 Freshman English	3
CH 174 Fundamentals of Chemistry II	4
BI 172 Plant or BI 173 Animal Biology	4
BI 282 Microbiology	4
Math or Social Science Elective	3
Physical Education	1
	19

SECOND YEAR — COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

First Semester		*Second Semester*	
EH 101 Environmental Health I	2	EH 102 Environmental Health II	2
EH 207 Milk and Food Sanitation	2	Social Science Elective	3
BI 119 Microbiology	4	Specialization Elective	5
Ph 111 Physics I	4	Electives	6-8
Specialization Elective	3		
	15		16-18

65 semester hours required for degree

SCIENCE LABORATORY TECHNOLOGY - A.A.S.

Allied Health Concentration

FIRST YEAR — FULTON-MONTGOMERY COMMUNITY COLLEGE

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
CH 173 Fundamentals of Chemistry I	4	CH 174 Fundamentals of Chemistry II	4
BI 171 Modern Biology	4	BI 172 Plant or	
Math Elective	3-4	BI 173 Animal Biology	4
Physical Education	1	Math Elective	3-4
		BI 282 Microbiology	4
	15-16	Physical Education	1
			19-20

SECOND YEAR — COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

First Semester		*Second Semester*	
Social Science Elective	3	CH 224 Instrumental Analysis or	
Specialization Electives	6	CH 226 Radiation Science	3
Electives	6	Social Science Elective	3
		BI 118 Human Physiology	3
	15	Specialization Electives	4
		Elective	3
			16

66 semester hours required for degree

FOOD SERVICE ADMINISTRATION - A.A.S.

FIRST YEAR — FULTON-MONTGOMERY COMMUNITY COLLEGE

First Semester	
EN 125 Freshman English	3
Social Science Elective	3
BI 171 Modern Biology or SC 141 Introduction to Biology	3-4
BU 111 Business Mathematics	3
Liberal Arts Elective	3
Physical Education	1
	16-17

Second Semester	
EN 126 Freshman English	3
Social Science Elective	3
BI 282 Microbiology	4
Electives*	6
Physical Education	1
	17

SECOND YEAR — COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

First Semester	
FA 111 Foods I	3
FA 122 Nutrition I	3
FA 242 Food Service Equipment	3
FA 247 Menu Planning and Food Merchandising	3
Elective**	3
Elective	2
	17

Second Semester	
FA 112 Foods II	3
FA 132 Quantity Foods I	3
FA 145 Food Purchasing and Cost Control	3
FA 255 Management Organization and Supervision	4
Elective**	3
	16

SUGGESTED ELECTIVES FOR ALL PROGRAMS

*Fulton-Montgomery Community College

**Cobleskill Agricultural and Technical College

BU 137 Business Communication
BU 144 Data Processing Manual
SS 291 General Psychology
CH 173 Fundamentals of Chemistry
DP 110 Introduction to Data Processing
BU 121 Accounting
BU 141 Introduction to Business
BU 241 Marketing
BU 246 Advertising
BU 253 Personnel Management
BS 141 Business Communication
BA 109 Office Machines Practice
PY 111 General Psychology
CH 111 Chemistry I
DP 180 Theory and Applications of Data Processing
BA 101 Principles of Accounting I
BM 131 Principles of Business
BM 134 Principles of Marketing
BM 241 Advertising
BM 245 Personnel Management

66 semester hours required for degree

FLORICULTURE AND NURSERY MANAGEMENT - A.A.S.

FIRST YEAR — FULTON-MONTGOMERY COMMUNITY COLLEGE

First Semester		*Second Semester*	
EN 125 Freshman English	3	EN 126 Freshman English	3
Social Science Elective	3	Social Science Elective	3
BI 171 Modern Biology	4	BI 172 Plant Biology	4
Electives	6	Electives	6
Physical Education	1	Physical Education	1
	17		17

SECOND YEAR — COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

First Semester		*Second Semester*	
OH 111 Floral Design I	3	OH 172 Flower Shop Management	3
OH 131 Floriculture	3	OH 186 Entomology	3
AG 111 Soil Science	3	OH 114 Floral Laboratory Technology	1
OH 111 Floral Laboratory Technology	1	OH 212 Floral Design II	3
OH 141 Nursery Management	3	OH 214 Floral Laboratory Technology	1
OH 181 Plant Pathology	3	OH 232 Floriculture II	3
OH 213 Floral Laboratory Technology	1	OH 251 Green House Management	3
	17		17

68 semester hours required for degree

CERTIFICATE PROGRAMS

GENERAL EDUCATION

The General Education curriculum is a one-year program leading to a certificate of completion. This program may be useful to the student who wishes to strengthen his academic background before embarking on a program of study leading to the Associate degree. It also offers the student with limited or unsettled educational goals the opportunity for a year of broadly based study and exploration.

First Semester

EN 010 College Preparatory English*	3
MA 050 Algebra or MA 121, 102, & 103	3
HD 150 Reading and Learning Skills	3
HD 021 Personal Development or HD 100 Studies of the Person	3
Physical Education	1
Exploratory Elective - Technical, Vocational, Liberal Arts**	2-4
	13-17

Second Semester

EN 010 College Preparatory English* or Speech EN 132	3
HD 022 Educational and Vocational Exploration	3
Exploratory Elective - Technical, Vocational, Liberal Arts**	6-9
	12-15

*Students may take more advanced courses with approval.

**Not required for completion of certificate.

NOTE: Some students will remain in this program for only one semester. Some will terminate after one year, and some will enter other programs at the College.

SECRETARIAL STUDIES CERTIFICATE PROGRAM

This program is open to all students who have had satisfactory high school training in shorthand, or its equivalent. This program leads to a certificate in secretarial studies at the end of one year. Students completing the program are qualified to accept positions as secretaries, stenographers, and receptionists in business, government, and industry. All courses included in this program may be transferred to the Secretarial Science degree program.

First Semester

*BU 133 Beginning Typewriting or BU 134 Intermediate Typewriting	3
BU 144 Data Processing Manual	3
BU 231 Shorthand and Transcription	3
BU 235 Secretarial Procedures	3
BU **Elective	3
	16

*Depending on preparation

**May be taken either semester

Second Semester

BU 137 Business Communications	3
BU 232 Shorthand and Transcription	4
BU 234 Advanced Typewriting	3
BU 236 Secretarial Procedures	3
	13

CLERK-TYPIST

This program leads to a certificate as a clerk-typist at the end of one year. A minimum of 24 semester hours are required. The courses listed below

must be passed with a satisfactory grade with the exception of the typewriting course which must be passed with a minimum grade of C. This program prepares students for positions as clerk-typists, receptionists, and general office workers in business, industry, and government. Most courses in this program can be used to meet the requirements for an Associate in Applied Science degree.

First Semester

*BU 133 Beginning Typewriting or	
BU 134 Intermediate Typewriting	3
BU 144 Data Processing Manual	3
BU 235 Secretarial Procedures	3
BU **Elective	3-5
	12-14

*Depending on preparation

**Beginning shorthand may be taken as an elective.

Second Semester

BU 137 Business Communications	3
BU 234 Advanced Typewriting	3
BU 236 Secretarial Procedures	3
Elective	3-5
	12-14

CRIMINAL JUSTICE

This program leads to a certificate in Criminal Justice and is designed to prepare students to become members of the municipal, county and state police forces, as well as Federal Protection Officer, United States Marshal, campus security guard, correctional officer, institutional guard, youth-aid worker, social worker and other positions in the criminal-justice system. The program is open, as well, to those who are currently employed in law enforcement. The Criminal Justice (CJ) courses are only offered in the evening and summer through the Continuing Education Division. Below is a suggested sequence of the courses required for this certificate.

First Semester

EN 125 Freshman English	3
Mathematics requirement (Strongly suggested: MA 160 Statistics)	3
CJ 101 Police Administration I	3
CJ 103 Criminal Law I	3
CJ 106 Introduction to Law Enforcement and Criminal Justice	3
SS 291 General Psychology	3
	18

Second Semester

EN 126 Freshman English	3
CJ 102 Police-Administration II or	
CJ 104 Criminal Law II	3
CJ 105 Principles of Criminal Investigation	3
CJ 107 Police-Community Relations or	
CJ 108 Introduction to Juvenile Delinquency	3
SS 281 Introduction to Sociology	3
	15

COURSES

BUSINESS

Accounting

BU 121 Accounting **3 s.h.**

First half of a one-year course introducing accounting theory. Theory of debit and credit; accounts and special journals; the accounting cycle; accounting for notes and interest, accrued items, receivables, inventories, and plant assets; preparation of financial statements. Emphasis is on sole proprietorship.

Hours of class per week: 3.

BU 122 Accounting **3 s.h.**

A continuation of BU 121. Accounting for partnerships and corporations; control systems for departments; manufacturing; analysis of statements and data.

Prerequisite: BU 121. Hours of class per week: 3.

BU 220 Managerial Accounting **3 s.h.**

Course is devoted to the use of, rather than the construction of, accounting records and statements. Topics covered are analysis and interpretation of financial data, flow of funds, cost concepts and applications, budgets, and decision making.

Prerequisite: BU 122 or permission of instructor.

BU 221 Intermediate Accounting **3 s.h.**

Corporate accounting is emphasized. Major classification of items found in financial statements, including cash, investments, receivables, and inventories are analyzed.

Prerequisite: BU 122. Hours of class per week: 3.

BU 222 Intermediate Accounting **3 s.h.**

A continuation of the studies in BU 221, including analysis of liabilities, stockholders equity, land, buildings, and equipment.

Prerequisite: BU 221. Hours of class per week: 3.

BU 224 Cost Accounting **3 s.h.**

Accounting for direct labor, materials, and factory overhead with emphasis on job order costing. Process cost system, standard cost principles and procedures, budgets and direct decision making.

Prerequisite: BU 122. Hours of class per week: 3.

BU 225 Income Tax Accounting **3 s.h.**

Federal and State income tax law and regulations are studied. Taxable income, inclusions and exclusions, capital gains and losses, deductions and other topics are covered. Practice is provided in preparation of income tax returns.

Prerequisite: BU 121 or permission of instructor. Hours of class per week: 3.

Business Administration

BU 101 Principles of Business **3 s.h.**

An introductory course to the diverse world of business; its structures, its operations and its impact upon each of us as employees, as consumers, as individuals, and as members of society. The course is designed to acquaint the student to functional areas of the business concern such as planning, organizing, directing, activating, and controlling and provides a framework upon which the student may choose a career core for further study and training. Case studies will be utilized as well as computerized and manual business games, etc.

Hours of class per week: 3.

BU 111 Mathematics of Business Finance **3 s.h.**

Review of the basic fundamentals and use of shortcut operations in computations. Instruction in financial problems of bank discount, interest, taxes, insurance, depreciation, trade and cash discounts. Analysis of financial statements.

Hours of class per week: 3.

BU 115 Business Statistics **3 s.h.**

Course deals with statistical application of practical problems in economics and business. Areas considered are methods of collecting statistical business data; methods of predictions and probability, inventory control; analysis of systems; and application of measures.

Prerequisite: High School algebra or equivalent. Hours of class per week: 3.

BU 150 Retailing **3 s.h.**

Topics included are the marketing concept in retailing; factors of area and market analysis; and aspects of organizational structure, layout and personnel planning. Also covered are methods of pricing, merchandising planning, inventory and expense control, and sales promotion techniques.

Hours of class per week: 3.

BU 152 Production Management **3 s.h.**

The objective of this course is to provide a broad view of production/operations management using both descriptive and analytical material.

Descriptions of production areas and the problems involved are blended with analytical approaches.

Prerequisite: BU 101. Hours of class per week: 3.

BU 241 Marketing **3 s.h.**

An analysis of the principles, methods, trends and problems existing in marketing. A study of the distribution function of middlemen, their movement of goods and marketing policies, with some discussion of marketing research.

Prerequisite: BU 101. Hours of class per week: 3.

BU 252 Retail Management **3 s.h.**

A study of the principles and problems in the management of retail operations covering organization, store planning, selecting locations, customer services, merchandising policies, stock levels, and purchasing procedures.

Prerequisite: BU 101 & BU 150. Hours of class per week: 3.

BU 151 Personnel Management **3 s.h.**

An introduction to fundamentals of constructive personnel practices and personnel techniques of American industry is presented. Emphasis is placed on screening and selection; job evaluation and wage administration; managerial compensation training and development, input and output evaluations; general personnel policies; and the supervisor's role in administration.

Hours of class per week: 3.

BU 261 Advertising **3 s.h.**

A survey of the advertising field, policies, procedures, practices in planning and preparing various types of advertisements and selection of media.

Hours of class per week: 3.

BU 271 Business Law **3 s.h.**

A course designed to familiarize the student with the law as it affects business, personnel and social activities. A study of basic legal principles and procedures in addition to such topics as: the origin and kinds of law, the law of contracts, sales, commercial paper, and of agency and employment should provide the student with an understanding of the rights and duties of individuals and of businesses. The approach used includes case and text analyses and discussion.

Hours of class per week: 3.

BU 272 Management and the Law **3 s.h.**

This course is designed to emphasize the major functional areas of business administration such as marketing, management, personnel and finance and their legal bases. The approach will be to subordinate the technical legal terminology by stressing the economic bases for much of the law which influences current business practices. Problems within the functional areas will be discussed and explained as having a more than one-dimensional affect upon the business concern and its public but an affect that at once is both legal and economic. The approach used will include cases, text analyses and discussion.

Prerequisites: BU 271 or BU 101 suggested.

BU 281 Financial Management **3 s.h.**

A study of the accumulation, use and control of funds in a business enterprise with emphasis on the problems of financially managing today's corporations.

Prerequisite: BU 101 with BU 122 strongly recommended. Hours of class per week: 3.

Data Processing

DP 100 Key Punching **3 s.h.**

A survey of the punched card and its use, illustrating the need for machine processing solution to accounting and records keeping problems along with the concept, power, and flexibility of the unit record. Unit record equipment as an independent system is

discussed and studied as well as its use and support for computers. Laboratory exercises are executed, involving setup and operation of the keypunch machine.

Hours of class per week: 3.

DP 110 Introduction to Data Processing 3 s.h.

An orientation course designed to introduce the terminology and concepts of automated data processing. Topics include methods of Data Processing, data representation, unit-record systems, stored program, computer programming languages, and input-output devices.

Hours of class per week: 3.

DP 111 Computer Concepts 3 s.h.

An introduction to computer programming fundamentals and concepts. Topics include fundamentals of programming, symbolic language, input-output operations and control. Arithmetic operations, and introduction to high-level languages.

Hours of class per week: 3.

DP 112 Computer Programming (BAL) 3 s.h.

A course in the use of the computer to obtain standard business reports and problem solving. This course is problem oriented and utilizes Basic Assembler Language asthe major programming language. Laboratory exercises are provided on the Univac 9300 II Computer.

Prerequisite: DP 111. Hours of class per week: 3.

DP 120 Computer Programming (FORTRAN) 3 s.h.

An advanced course in applying the principles of data processing to standard business applications and to mathematical problem solving. Emphasis is on advanced file organization and maintenance, and programming techniques. The course is procedure oriented and utilizes FORTRAN programming language. Laboratory exercises are provided on the Univac 9300 II Computer.

Prerequisite: DP 112 for D. P. majors, DP 110 for non-D.P. majors. Hours of class per week: 3.

DP 121 Computer Programming (COBAL) 3 s.h.

An advanced course in applying the principles of data processing to standard business applications. Programming techniques and file maintenance procedures through the utilization of the high-level programming language COBAL are emphasized. Laboratory exercises are provided on the Univac 9300 II Computer.

Prerequisite: DP 122 for D.P. majors, DP 110 for non-D.P. majors. Hours of class per week: 3.

DP 122 Computer Programming (RPG) 3 s.h.

A course in the utilization of data processing concepts for problem solving in standard business procedures. This course is problem oriented and utilizes Report Program Generator as the major programming language. Emphasis is on report preparation, programming procedures, file organization and maintenance, and introduction to utility programs. Laboratory exercises are provided on the Univac 9300 II Computer.

Prerequisite: DP 112 for D.P. majors, DP 110 for non-D.P. majors. Hours of class per week: 3.

DP 130 Data Processing Seminar 4 s.h.

This seminar is limited to a restricted number of advanced students majoring in Data Processing. It involves an arranged schedule of off-campus work in an operating business data processing installation. It is designed to offer the students direct involvement in an on-the-job situation.

Prerequisite: DP 120, DP 121, or DP 122. Hours of class per week: 1 hour seminar discussion, 15-20 hours on the job.

DP 131 Data Processing Systems 3 s.h.

A study of data processing systems, including analysis of various existing data processing hardware and applications in business and industry. Includes a study of integrated or total management information systems. Problems of the EDP Department are discussed. Emphasis is given to analysis of management decision needs and control requirements, as well as the critical understanding of the total environment in which EDP must serve and support. Problems in EDP systems are undertaken by the student.

Prerequisites: DP 120, DP 121, or DP 122. Hours of class per week: 2. Hours of lab per week: 2.

DP 132 Computer Science 3 s.h.

Solving tool for math and science. Topics covered include algorithms and computers, advanced flowcharting, approximations, looping, fractional references, root-mean-square

deviations, etc. The student will utilize FORTRAN IV for solving of intermediate and complex mathematical applications.

Prerequisite: DP 120. Hours of class per week: 3.

Economics

EC 180 Introduction to Economics **3 s.h.**

A one-term course designed around topics and problems which emphasize the individual's participation in the economy, both as consumer and supplier of productive resources, and the private and public institutions through which economizing is accomplished. Basic economic concepts will be introduced where they are necessary to explain economic activity. Special attention is paid to topics such as employment and unemployment, poverty and affluence, education and opportunities, incomes and costs of living in discussion sessions. This course may not be taken after the completion of any other course in economics.

Prerequisite: none.

Secretarial Science

BU 131 Shorthand **5 s.h.**

Basic principles of Gregg shorthand, including mastery of brief forms. Development of skill in reading and writing shorthand.

Hours of class per week: 5.

BU 132 Shorthand **5 s.h.**

Review of basic shorthand principles. Emphasis on skill in reading and writing shorthand at progressively higher rates of speed for sustained periods of time. Spelling, punctuation, grammar, and the development of business vocabulary are included.

Prerequisite: BU 131, Hours of class per week: 5.

BU 133 Typewriting **3 s.h.**

Development of basic skills and techniques. Introduction to the use of carbon paper, simple tabulations, business and personal letters, manuscripts and business forms.

Hours of class per week: 3, 2 hr. of Lab.

BU 134 Typewriting **3 s.h.**

This course emphasizes the development of speed and accuracy and includes work in the production of business letters, reports, business forms, tabulations and manuscripts, preparation of masters and stencils for duplication, and extensive use of electric typewriters.

Prerequisite: BU 133 or equivalent. Hours of class per week: 3.

BU 137 Business Communications **3 s.h.**

Development of a thorough knowledge of correct spelling, punctuation, capitalization, sentence structure, and word choice. Emphasis on the structure of the business letter and the composition of various types of business communications.

Hours of class per week: 3.

BU 138 Shorthand Skills **1 s.h.**

Review of basic principles, brief forms, and building reading and writing skills.

Prerequisite: One year of high school shorthand. Hours of class per week: 2.

BU 144 Data Processing Manual **3 s.h.**

Unit record equipment as an independent system is discussed and studied as well as its use and support for computers. Basic concepts of processing data in office sitations. Analysis of manual machine operation. Key punching and operation techniques of tabulating equipment.

Hours of class per week: 3.

BU 155 Stenograph **3 s.h.**

Development of the mastery of the keyboard and theory of machine shorthand.

Hours of class per week: 5.

BU 156 Stenograph **3 s.h.**

Continuation of machine shorthand theory. Dictation speed to 80 words per minute and introduction to transcription.

Prerequisite: BU 155. Hours of class per week: 5.

BU 231 Shorthand and Transcription **4 s.h.**

Development of speed and accuracy in taking dictation of new material. Review of grammar, spelling, punctuation, and typing skills with emphasis on the transcription of mailable letters. Introduction to office style dictation.

Prerequisite: BU 132. Hours of class per week: 6.

BU 232 Shorthand and Transcription **4 s.h.**

Emphasis on improving transcription skills, spelling, and grammar. Further development of speed and accuracy in producing mailable letters.

Prerequisite: BU 231. Hours of class per week: 6.

BU 234 Typewriting **3 s.h.**

This course continues the development of speed, accuracy, and production work. It includes the use of various types of reproduction equipment.

Prerequisite: BU 134. Hours of class per week: 3.

BU 235-236 Secretarial Procedures
3 s.h. each semester

A two-semester course covering secretarial duties and responsibilities. Fundamental office procedures are emphasized including procedures for processing mail; preparing business reports; developing receptionist and telephone techniques; handling banking, financial and legal transactions; using reference materials; making travel and meeting arrangements, and filing.

Prerequisite: BU 134. Hours of class per week: 3.

BU 255 Stenograph **3 s.h.**

Advanced theory and development of speed to 120 words per minute. Development of transcription skill.

Prerequisite: BU 156. Hours of class per week: 5.

BU 256 Stenograph **3 s.h.**

Development of machine shorthand speed to 150-200 words per minute. Emphasis on speed and accuracy in transcription.

Prerequisite: BU 255. Hours of class per week: 5.

HUMANITIES

English

EN 010 College Preparatory English **3 s.h.***

This course teaches the fundamentals of writing and may be a prerequisite for further study of composition for some students. It is aimed at helping students who need special assistance in the improvement of writing and includes a study of grammar and composition with emphasis on the fundamental principles of writing.

Hours of class per week: 3.

EN 011 College Preparatory English **3 s.h.***

A continuation of the study of fundamental principles of writing with a continuing emphasis on the improvement of the student's writing skills.

Hours of class per week: 3.

**Not credited toward Associate Degree.*

EN 125 Freshman English **3 s.h.**

The objective of this course is to improve writing and speaking effectiveness. The first of a two-semester sequence for all freshmen, the course will deal with methods of developing essays of exposition with an emphasis on clarity of thought, organization of ideas, and mechanics. Some research skills will be covered and students will learn procedures of proper documentation. Research techniques may be further stressed through oral presentations such as informative speeches. By the end of the semester, students will be expected to be able to write a short essay which is logically developed and mechanically correct. They will also be expected to deliver a short oral presentation which is logically developed in appropriate, clear language.

Hours of class per week: 3.

EN 126 Freshman English **3 s.h.**

This course is designed to develop further the skills acquired in EN 125. It will offer a futher investigation of methods of exposition and emphasize analysis and the skills required for critical and imaginative writing and oral interpretation. Selected readings will serve as models for student writing and as a basis for oral interpretation and discussion groups. Research skills will be further developed and a research

paper and/or oral report will be required.
Prerequisite: EN 125. Hours of class per week: 3.

EN 132 Speech **3 s.h.**
This course introduces the student to the forms of public speaking and affords him the opportunity to practice both the formal and informal deliveries of speech. Individual expression and creativity are still the main tenets of this course. The course aims to enrich the student's ability to communicate. Emphasis is placed on the spoken word. Various forms of discourse are studied and put into practice. Outside readings are required and the student prepares critical evaluations. The student is also given the opportunity to work with panel and discussion groups.
Hours of class per week: 3.

EN 231 Masterpieces of World Literature **3 s.h.**
The course surveys world literature from the Greek and Roman classics up to, but not including 20th Century materials. Outside readings are required to supplement the materials treated in the course. The readings include selections from Homer, Sophocles, Plato, Virgil, Dante, Chaucer, and other representative authors.
Prerequisite: EN 126 desirable. Hours of class per week: 3.

EN 232 Masterpieces of World Literature **3 s.h.**
The course surveys world literature beginning with a study of Melville and other representative authors. Outside readings are required to supplement the materials treated in this course.
Prerequisite: EN 125, (126 desirable). Hours of class per week: 3.

EN 233 American Literature **3 s.h.**
A survey of American Literature from the Puritan period to the middle of the Nineteenth Century.
Prerequisite: EN 125, (126 desirable.) Hours of class per week: 3.

EN 234 American Literature **3 s.h.**
A survey of American Literature from the middle of the Nineteenth Century to the present.
Prerequisite: EN 125 is desirable. Hours of class per week: 3.

EN 235 Modern Drama **3 s.h.**
This course is an introduction to modern drama as literature and includes a representative sample of a number of plays. Aspects of modern drama such as naturalism, expressionism, and theatre of the absurd are considered as seen in the works of Ibsen, Strindberg, Chekhov, Pirandello, Lorea, Ionesco, and Albee. American playwrights include O'Neil, Miller and Williams. Emphasis is placed on the meaning and appreciation of the plays through class discussion. Students will see a current dramatic production. A critical paper is required.
Prerequisite: EN 125 (EN 126 desirable). Hours of class per week: 3.

EN 236 Introduction to Theatre **3 s.h.**
This course is intended as a survey to introduce the student to theater as a technique apart from, although closely related to, literature. The student will study acting techniques, stage devices, set design, costuming, make up. Significant drama will be read to identify application of theatrical principles. The combination will provide concepts of drama as art, audience reactions and needs, methods of expression, and interpretation. Textbooks will be used and laboratory experience will be provided.
Hours of class per week: 3.

EN 237 Introductory Readings in Modern Literature **3 s.h.**
This course is an introductory approach to literature. Emphasis is placed on cultural analysis and advanced critical skills.
Hours of class per week: 3.

EN 239 The Modern Novel **3 s.h.**
The study, interpretation, discussion, and analysis of some of the great American and European novels in the period from 1900 to the present day. Major work by leading twentieth century novelists associated with naturalism, realism, stream-of-consciousness, and other schools will be considered.
Prerequisite: EN 125-126 desirable. Hours of class per week: 3.

EN 257 Creative Writing **3 s.h.**
Instruction and practice in the various avenues of creative written expression. Poetry, drama, novel, short story, and other literary forms are investigated, but primary emphasis is placed on the student's development of his writing abilities

along the lines of his particular interests and needs. Creative work is encouraged through regular individual conferences.

Prerequisite: EN 125 or EN 126 desirable; permission of instructor. Hours of class per week: 3.

EN 299 Independent Study **1-3 s.h.**

This course provides the opportunity for any student of English to investigate areas not available in existing English courses. Students may contract to undertake 1-3 hours of independent study provided they obtain the sponsorship of a member of the English staff. Students must submit a written and/or oral report before, and upon completion of, the project. Projects and the amount of credit to be earned must receive the sponsoring instructor's and/or Divisional approval.

Prerequisite: EN 125-126 desirable.

Modern Foreign Languages

FL 141-142 Elementary French
3 s.h. each semester

A beginner's course covering the fundamentals of oral comprehension, oral expression, and grammar. Readings in French familiarize the student with the civilization of France.

Hours of class per week: 3. Hours of lab per week: 1.

FL 241-242 Intermediate French
3 s.h. each semester

In this intermediate course the comprehension and use of the spoken language are studied, as well as its grammar and composition, and the cultural aspects of the language. Reading texts are chosen to enable the student to converse in idiomatic French and to awaken his interest in French Literature.

Prerequisite: FL 142. Hours of class per week: 3. Hours of lab per week: 1.

FL 331 French Conversation and Composition **3 s.h.**

This course is designed to help students express themselves in idiomatic French. Emphasis will be placed on vocabulary used in every-day situations. Grammar will be reviewed as needed to facilitate oral and written communication. Assigned readings will assist the student in learning the expressions necessary for communication.

Prerequisite: FL 242 or the equivalent. Hours of class per week: 3.

FL 332 Readings in French **3 s.h.**

This is not a sequential course.

A variety of readings in French from the works of representative authors. Class discussion will focus on the analysis of assigned readings to give the student a general basis for more specific work in literature and to help him understand articles in French publications. Oral expression will be stressed.

Prerequisite: FL 242 or the equivalent. Hours of class per week: 3.

FL 143-144 Elementary Spanish
3 s.h. each semester

A beginner's course using the audio-lingual approach. The course gives the student a working knowledge of the essentials of grammar and the ability to read with reasonable facility. Graded readings supplement the text and serve as a basis for conversation.

Hours of class per week: 3. Hours of lab per week: 1.

FL 243-244 Intermediate Spanish
3 s.h. each semester

The comprehension and use of the spoken language is further developed in this second-year language course. Grammar, composition, and the cultural aspects of the language are studied. Readings in Spanish introduce the student to Hispanic life and literature.

Prerequisite: FL 144. Hours of class per week: 3. Hours of lab per week: 1.

FL 343-344 Spanish Reading and Composition
3 s.h. each semester

A review of grammar. A survey of the history, culture and civilization of Spain as the background for the reading of literary selections by Spanish authors: oral expression as well as composition is stressed.

Prerequisite: FL 244. Hours of class per week: 3. Hours of lab per week: 1.

FL 147-148 Elementary German
3 s.h. each semester

A beginner's course stressing the conversational approach to the language. Essential grammar is studied and composition is

introduced.

Hours of class per week: 3. Hours of lab per week: 1.

FL 247-248 Intermediate German
3 s.h. each semester

A review of grammar combined with the reading of selected works of contemporary German authors. Oral expression as well as composition is stressed.

Prerequisite: FL 148. Hours of class per week: 3. Hours of lab per week: 1.

FL 299 Independent Study

This course provides the opportunity for any student of French, German, or Spanish to investigate areas not available in existing language courses. Students may contract to undertake 1-3 hours of independent study in French, German, or Spanish, provided they obtain the sponsorship of a professor in the Language Department and the approval of the Department.

A written report to be read and approved by the Division Chairman and the Language Department will be required. Granting of credit is administered by the Division Chairman and the Language Department.

Art

AR 100 Studio Art **3 s.h.**

This is a basic course in drawing, painting, and sculpture and will introduce the novice artist to the varied forms of self expression which are available to him and will aid him in controlling the tools at his disposal. There will be studio experience with a variety of art media. Emphasis will be placed on line, color, texture, form, and space. An analysis and critique of the student's studio work will be made.

Hours of class per week: 4.

AR 101 Art History **3 s.h.**

Introduction to the history of art. A survey of world painting, sculpture, and architecture from prehistoric times to the Renaissance. Emphasis will be placed on stylistic developments and appreciation of man's aesthetic achievements. Presentation will combine lecture, text, and visual materials.

Hours of class per week: 3 s.h.

AR 102 Art History

A continuous introductory course to the History of Art. This course surveys world painting, sculpture, and architecture, from the Renaissance to the present twentieth century.

Prerequisite: None (AR 101 desirable). Hours of class per week: 3.

AR 150 Basic Design **3 s.h.**

This program and course of study will introduce students to the principles and practices in two- and three-dimensional design.

Prerequisite: None.

AR 200 Printmaking I **3 s.h.**

Introduction to basic printmaking process: intaglio (etching, aquatint, drypoint, life ground, mezzotint). The collagraph print, the relief print, (woodcut, color relief print, wood engraving). A consideration of the basic technique in print making. Ideas and techniques will be explored in both surface and intaglio printmaking. Emphasis on self expression via experimentation.

Prerequisite: AR 100 equivalent or permission of instructor. Hours of class per week: 4.

AR 299 Independent Study (Studio Art) **1-3 s.h.**

This course offers students an opportunity to work on a directed studio project and in a student selected art area. Students may undertake independent study in any art area of his choosing providing equipment is available for his project. The individual is the focus of the course. A formal presentation of his work in the form of an exhibit will be required upon the completion of his independent study. Granting of credit is administered by the Division Chairman and the Art Department.

Prerequisites: AR 100, consent of the instructor and Division Chairman.

Music

MU 011 College Chorus **1 s.h.***

A chorus of men and women studying standard choral literature and participating in public concerts. Open to acceptable singers on either a credit or non-credit basis. No out-of-class assignments. Attendance is required for scheduled hours and for concert performances to be presented during the year. One credit hour per semester* is not included in graduation

requirements. Also open to students on a non-credit basis if they are unable to make three rehearsals per week.

MU 103 History and Literature of Music 3 s.h.
An appraisal of the art of music through directed listening with illustrations from significant composers. It enables the student to understand music from various periods of history and the relationship to social and cultural life of the period being studied. Periods to be studied include Baroque, Classic, and Romantic.
Hours of class per week: 3.

MU 104 History and Literature of Music 3 s.h.
An appraisal of the art of music through directed listening with illustrations from significant composers. Reference to the Modern and Contemporary periods include the rapprochement of Jazz and serious music. Required readings.
Hours of class per week: 3.

MU 105 Experiments in Live Music; A Guide to Perceptive Listening 1 s.h.
Experience live music in performances of representative works of the 17th through the 20th centuries. Demonstrations of techniques of performance relating to interpretive problems of the varied repertoire.
Hours of class per week: 1.

MU 203 Theory I 3 s.h.
An introduction to the structure of Music. A course that explores and develops a student's knowledge of chordal structure, melody, rhythm, modes, and other elements of music through analysis and creative writing.
Prerequisite: Demonstration of competence in the rudiments of music; evaluation of the student by the instructor. Hours of class per week: 3.

MU 204 Theory II 3 s.h.
A continuation of the elements of Music to which the student was introduced in the first course, Theory I.
Prerequisite: MU 203, Theory I. Hours of class per week: 3.

MU 299 Independent Study 1-3 s.h.
This course provides the opportunity for any student of Music to investigate areas not available in existing Music courses. Students may contract to undertake 1-3 hours of independent study provided they obtain the sponsorship of a member of the Music staff. Students must submit a written and/or oral report before, and upon completion of the project. Projects and the amount of credit to be earned must receive the sponsoring instructor's and/or Divisional approval.
Prerequisite: Demonstration of competence in field of music by instructor evaluation of the student.

Philosophy and Language

HU 120 Introduction to French and Spanish Cultures 3 s.h.
A general information course taught in English about France and Spain. The course, touching on the traditions and civilizations of both countries, will place special emphasis on the social and historical background of French and Spanish cultural life. The course is designed to give an inspirational background for the study of French and Spanish similar to that obtained by travel. Audio-visual materials will be an integral part of the course.
Hours of class per week: 3.

HU 251 Introduction to Philosophy 3 s.h.
This course will introduce the student to both the philosophies and the philosophers who have contributed much to man's thinking. The range of the course will be from the writings of Plato to such as Santayana, Dewey, and William James.
Hours of class per week: 3.

HU 254 Logic and Argument 3 s.h.
This course presents logic as a mean for analyzing social, political, and philosophical controversy. The approach is from the linguistic and semantic side, with training in finding the thread of argument within the tangles of commonplace speech and writing. Interest in language is important. This course covers most of the traditional logic of philosophy, such as the syllogism and the use of reasoning in the development of new knowledge, as well as the elements of critical thinking.
Prerequisites: Sophomore standing or completion of 6 hours of English. Hours of class per week: 3.

HU 258 Ethics 3 s.h.
Traditional ethics leaves a great many moral

questions unsettled. The ethicist tries to resolve these with a consistent set of principles. A fourth of the course paves the way for later analysis by practical inquiry into the meaning of "right", "conscience", happiness, ultimate goods, the apparent relativity of moral codes, the feasibility of egoistic or altruistic conduct and many other observational matters. With this background, the arguments and counter-arguments of leading schools are presented — such as Stoic, act utilitarian, Kantian, Rousseauism, and rule utilitarian. The last fourth of the course is devoted to theories of justice.

Prerequisite: Sophomore standing, or a previous course in Philosophy, or permission of the instructor.

HU 267 Modern Philosophers **3 s.h.**

This course is an introduction to the philosophers and problems from Descartes to the contemporary period. Representative philosophers will be examined along with such philosophical movements as rationalism, empiricism, pragmatism, and analytic philosophy.

Prerequisite: HU 251 desirable

HU 271 Comparative Religions **3 s.h.**

This is a survey course of the living religions of our day. Comparison is made of similarities and differences, by a study and survey of institutions, practices, and beliefs.

MATHEMATICS

The Mathematics Division offers several one semester hour courses, each taught during a period of approximately four weeks. While these courses are usually sequential, a student may enroll in any course for which he meets the prerequisite.

Typical sequences are:
MA 121 - MA 181 - MA 172 - MA 173 (Precalculus)
MA 121 - MA 122 - MA 123 (Finite Mathematics)
MA 121 - MA 102 - MA 103 (Survey of Mathematics)

MA 050 Algebra **4 s.h.***

A modern approach to introductory algebra. This course is designed to prepare students who have an insufficient mathematics background to pursue college work. Topics include: sets and number systems; operations; exponents; polynomials and rational expressions; first degree equations; functions and graphs; verbal problems.

Hours of class per week: 4.

**Not credited toward the Associate Degree.*

MA 102 Introduction to Numbers **1 s.h.**

An overview of the nature of mathematics for the non-science student. Topics include: Primitive Systems; Decimal Numeration, Bases, Primes. Not open to students having two years of high school Algebra or MA 151.

Prerequisite: MA 121. Hours of Class: 4.

MA 103 Introduction to Numbers 2 **1 s.h.**

Continuation of MA 102. Topics include: Factorization, Properties of the Natural Numbers, Integers; Rational Numbers; Order Properties Of A Real Field.

Prerequisite: MA 102. Hours of Class: 4.

MA 121 Logic and Sets **1 s.h.**

A course for science and non-science majors alike, which emphasizes the developmental techniques of reasoning. Topics include. Statements; Basic Connectives; Truth tables; Valid Arguments, Introductory Set Theory.

Prerequisite: None. Hours of Class: 4.

MA 122 Number Systems **1 s.h.**

A development of systems and their uses. Topics include Historical Systems; Number and Numeration Systems; Base Arithmetic, Modular Systems; Field Properties.

Prerequisite: MA 121 AND any of the following: Intermediate Algebra, Math 11, or MA 151. Hours of Class: 4.

MA 123 Linear Systems **1 s.h.**

A continuance of MA 122 developing linear systems, and some uses. Topics include: Matrix Operations; Transformations; Inverses; Solution of Simultaneous Linear Equations; Linear Programming.

Prerequisite: MA 122. Hours of Class: 4.

MA 141 Technical Mathematics **3 s.h.**

This course is restricted to Automotive Technology, Construction Technology, and Natural Resources Conservation students with a minimal competence in mathematics.

Topics include: Whole Numbers and the Place Value system; verbal problems; exponents; square roots; primes; factoring, L.C.M.; fractions; decimals; square root, discount, profit, interest; mensuration, perimeter and circumference, area; volume.

Prerequisite: Acceptance into AT, CT or NR. (this course is NOT required for students who demonstrate prior competence on a placement test. Hours of Class: 3.

MA 142 Technical Mathematics II **4 s.h.**

A first course for most students of Automotive, Construction and Natural Resources. Topics include: Review of whole numbers and operations; exponents; algebraic fractions; Slide rule; Use of decimals in Measurement; the Metric system; perimeter and area; Volume and surface area; signed numbers; triangles; right-triangle trigonometry; law of sines and cosines; logarithms; Dimensional analysis.

Prerequisite: MA 141 or permission of Mathematics Division by a placement examination. Hours of Class: 4.

MA 143 Applied Statistics **1 s.h.**

For students of Natural Resources, this course includes techniques of sampling, measures of central tendency and dispersion graphical presentations, linear correlation, and regression lines.

Prerequisite: MA 142 - Technical Mathematics II, or permission of division. Hours of Class: 4.

MA 150 Survey of Mathematics **3 s.h.**

A course for the non-science oriented student, emphasizing the nature of mathematics and the development of mathematical ideas and concepts. Topics include: numeration systems; sets; elementary logic and deductive reasoning; abstract systems; and the natural, integer, and rational number systems. Not open to students having two years of high school algebra or MA 151.

Hours of class per week: 3.

MA 151 Intermediate Algebra For College Students **4 s.h.**

This course is designed for students who have had only a minimum of high school mathematics and who wish to later enroll in any of the following: MA 121, 159, 160. Topics include: Properties of real numbers; polynomials and rational expressions; functions and graphs; simultaneous systems; logarithms, right triangle trigonometry.

Prerequisite: MA 050 or one year of high school algebra. Hours of class per week: 4.

MA 152 Topics From Finite Mathematics **3 s.h.**

The course will cover number and numeration systems, logic, set theory, Boolean algebra, matrices, and linear programming from an intuitive point of view.

Prerequisite: Intermediate Algebra, Math 11 or MA 151. Hours of class per week: 3.

MA 154 Precalculus Mathematics **4 s.h.**

A course designed to give a modern background for the calculus. Topics include: set theory; logic and techniques of proof; properties of the real number field; complex numbers; polynomial equations; functions - rational, exponential, logarithmic, circular (through asymptotes and intuitive limits); trigonometry; mathematical induction.

Prerequisite: MA 151 or 1½ years of high school algebra or Math 11. Hours of class per week: 4.

MA 157 Analytic Geometry and Calculus I **4 s.h.**

First course in a sequence of four courses covering topics from the calculus, analytic geometry, differential equations and advanced areas. Primarily for mathematics or science majors, although qualified students from other fields are encouraged to elect the course. Topics include: inequalities, introductory analytic geometry, functions, limits, continuity, the derivative, differentiation of algebraic functions, applications of the derivative, antidifferentiation.

Prerequisite: MA 154 or 3½ years of high school mathematics or 3 years of high school mathematics and permission. Hours of class per week: 4.

MA 158 Analytic Geometry and Calculus 2 **4 s.h.**

A continuation of MA 157. Topics include the definite integral; applications; analytic geometry; trigonometric, logarithmic and exponential functions; methods of integration.

Prerequisite: MA 157. Hours of class per week: 4.

MA 159 Mathematics of Finance **3 s.h.**

Open to liberal arts and selected business students. Topics include: simple interest, discount, partial payments, depreciation, bonds, annuities; life insurance. (offered Spring semester only).

Prerequisite: MA 151. Hours of class per week: 3.

MA 160 Statistics **3 s.h.**

A course designed to give a basic foundation in statistics for students with a limited background in mathematics and who wish to pursue careers in such areas as Business, Social Sciences, Science and Data Processing. Topics include: calculators; frequency distributions; measures of central tendency and variability; probability; binomial distributions; normal distributions.

Prerequisite: Math 11, Intermediate Algebra or MA 151. Hours of class per week: 3.

MA 161 Mathematics for Electrical Technology **4 s.h.**

During this course, the fundamental mathematical skills needed for students of the Electrical Technology curriculum are developed. Topics studied include: basic arithmetic skills and slide rule operation, algebraic manipulation, ratio, proportions, quadratics, logarithmic functions, right triangle trigonometry. Application of these topics to the field of electricity is stressed throughout this course. (Fall Semester Only).

Prerequisite: High School Algebra (1 year) and concurrent registration in EL 125. Hours of class per week: 4.

MA 162 Mathematics For Electrical Technology **4 s.h.**

As a continuation of MA 161, this course develops mathematical skills needed by students of Electrical Technology. Topics include: a survey of analytic geometry, and introduction to differential and integral calculus, numeration systems, and Boolean Algebra. Electrical Technology is stressed throughout the course. (Spring Semester Only).

Prerequisite: MA 161 and concurrent registration in EL 126. Hours of class per week: 4.

MA 171 Functions **1 s.h.**

Background material for the study of the calculus. Topics include: Properties of the Reals; Non-Linear Functions; Composite Functions; Absolute Values And Inequalities.

Prerequisites: MA 121 and any one of the following: MA 151, Math 11, or 1½ years of High School Algebra. Open to students who have enrolled in MA 157. Hours of Class: 4.

MA 182 Circular and Logarithmic **1 s.h.**

Precalculus material for students who have had no previous exposure to topics which include: Circular Functions; Logarithmic and Exponential Functions (Base 10 and e).

Prerequisite: MA 171, or permission of division. Hours of Class: 4.

MA 183 Theory of Equations **1 s.h.**

A continuation of MA 182. Topics include: Rational Functions; Asymptotes; Descartes Rule; Saars Theorem; Determinant Solutions To Systems of Equations; Induction.

Prerequisite: MA 182, or permission of the division. Hours of Class: 4.

MA 250 Survey of Mathematics **3 s.h.**

A sequel to MA 150, this course includes study of some of the same topics in greater depth, as well as topics selected from the following: Geometries; Relations, Functions and Graphs; Axiomatics and Proof, Introductory Probability; Measurement and Mensuration; History of Mathematics; Number Theory and Finite Systems.

Prerequisite: Elementary Algebra or MA 050; and MA 150. Hours of class per week: 3.

MA 254 Abstract Algebra **3 s.h.**

Topics: Sets, mappings, morphisms, groups, rings, integral domains, and fields. Recommended for Mathematics and Science majors. (Fall Semester Only).

Prerequisite: MA 157; concurrent registration in MA 158 or MA 257 desired. Hours of class per week: 3.

MA 257 Analytic Geometry and Calculus 3 **4 s.h.**

Topics include: polar coordinates; conic sections; Vectors in E2 and E3; hyperbolics; indeterminate forms, infinite series; Taylor's Series with Remainder; introductory calculus of several variables, partial differentiation and multiple integration; applications.

Prerequisite: MA 158. Hours of class per week: 4.

MA 258 Differential Equations **4 s.h.**

Topics include: Definitions, differential equations of first degree and order, applications, Bernoulli's equation, linear independence, general solutions to homogeneous and non-homogeneous equations, differential operators, auxiliary equations, the Laplace transfer and its inverse, systems of equations. (Spring Semester Only).

Prerequisite: MA 257. Hours of class per week: 4.

MA 259 Linear Algebra **3 s.h.**

This course is designed for second-year mathematics or science students. Topics covered: Systems of linear equations, vector spaces, linear dependence, bases, dimension, linear transformations, matrices determinants, and eigenvectors. (Spring Semester Only).

Prerequisite: MA 158, but concurrent registration in MA 257 is recommended. Hours of class per week: 3.

MA 299 Independent Study **1-3 s.h.**

This course provides the opportunity for any student of mathematics to investigate areas not available in existing mathematics courses. Students must submit a written and/or oral report before, and upon completion of the project. Projects and the amount of credit to be earned must receive Divisional approval.

SCIENCE AND ENGINEERING

Automotive Technology

AT 121 Theory of Internal Combustion **3 s.h.**

Basic principles of internal combustion engines, cycles, engine types, ignition, carburetion and construction. Laboratory experience with elementary diagnostic instruments for determining horsepower efficiency and basic identification of engine problems.

Hours of class per week: 2. Hours of lab per week: 2.

AT 122 Introduction to Automotive Function **3 s.h.**

Construction, operation, and repair of the chassis, including brakes, transmissions, differentials, front and rear suspension, clutch, etc.

Hours of class per week: 2. Hours of lab per week: 2.

AT 123 Automotive Body Fundamentals **3 s.h.**

Automotive body and frame construction, sheet metal work, basic repair of refinishing procedures. Special problems in repair and application of refinishing materials.

Prerequisite: Concurrent registration in AT 124. Hours of class per week: 2. Hours of lab per week: 3.

AT 124 Metals and Industrial Process **3 s.h.**

Characteristics and properties of metals, metallurgy, exyacetylane and arc welding.

Hours of class per week: 2. Hours of lab per week: 2.

AT 125 Automotive Fuel Systems **3 s.h.**

Basic Principles of service and repair of automotive fuel systems, including advanced carburetion theory and practice.

Prerequisite: PH 171 and AT 121. Hours of class per week: 2. Hours of lab per week: 2.

AT 126 Automotive Electrical Systems **3 s.h.**

Application of the principles of electricity to the design, operation, service and repair of automotive electrical starting, lighting, generating and ignition systems.

Prerequisite: PH 172, AT 121, AT 122. Hours of class per week: 2. Hours of lab per week: 2.

AT 127 Performance Problems Analysis **6 s.h.**

Analysis and repair of performance malfunctions effecting any and all parts of the automobile. Laboratory use of test equipment and instruments for diagnostic investigation; includes Sun universal tester, oscilloscope, dwell meter, generator-regulator tester, etc.

Prerequisite: AT 121, AT 122, AT 125, AT 126

Hours of class per week: 2. Hours of lab per week: 4.

AT 128 Retail Automotive Service **3 s.h.**

Methods and procedure of retail automotive service. Designed to prepare the student to deal with the public, supervise employees, and to create familiarity with general garage practices.

Hours of class per week: 3.

Biology

BI 121 Nutrition **3 s.h.**

A study of the basic nutritional need required for the maintenance of active health in man. Special emphasis will be placed on relating nutritional needs to specific menu planning.

Hours of class per week: 3.

BI 125 Advanced Nutrition **3 s.h.**

An understanding of the nature and relationship between the nutritional requirements of man and the nutritive value found in foods. Emphasis will be placed on food storage and preparation as it pertains to the maintenance of a high nutrient value. Vitamin and mineral deficiency diseases will be stressed.

Prerequisite: BI 121. Hours of class per week: 3.

BI 171 Modern Biology **4 s.h.**

A course in general biological principles relating cell structure to function. Topics discussed will include the origin and evolution of life; biochemistry, energetics; the molecular basis of cell metabolism; principles of heredity and the genetic control of cell activity; cell division; the homeostatic regulation of the cell environment. Physiological processes at the organismic level will be analyzed and correlated with the simpler manifestations at the cell level. Emphasis will be placed on modern research, the nature and philosophy of science, and the art of experimentation as carried on concurrently in the laboratory portion of the course.

Hours of class per week: 3. Hours of lab per week: 3.

BI 172 Plant Biology **4 s.h.**

An introduction to the structure, functions, and development of seed plants, followed by a survey of the diversity and economic significance of the plant kingdom. The organs of plants will be studied in relation to their morphogenesis, functional interaction, and special physiological roles. These plant organs will also be studied in relationship to their interaction with environmental factors such as air and soil. The major plant groups will be studied from the algae through the Angiosperms. The interactions of the plants in each of these groups will be considered with respect to such concepts as energy flow, competition, parasitism, plant succession, and biome composition. Major emphasis will be placed on basic concepts of population genetics and evolution.

Prerequisite: BI 171 or permission of instructor. Hours of class per week: 3. Hours of lab per week: 3.

BI 173 Animal Biology **4 s.h.**

An evolutionary survey of the animals, from Protozoa through Chordata, and their ecology. Both gross and microscopic structures of vertebrates and invertebrates will be studied in relation to their development, functional interactions, and special physiological roles. These concepts shall be related to paleontology, biogeography, and population genetics, so that the student will be aware of the evolutionary significance of the structures studied. Emphasis will be placed on vertebrate history and behavior, especially as it concerns the origin of man.

Prerequisite: BI 171 or permission of instructor. Hours of class per week: 3. Hours of lab per week: 3.

BI 174 Psychobiology **4 s.h.**

The purpose of this introductory course is to explore the interface between biology and psychology and to attempt to understand animal and human behavior as natural extensions of established biological principles. Human and animal behavior will be viewed in the light of (1) the functioning of self-regulating systems in general, (2) the anatomy and physiology of nervous systems, and (3) comparative studies and the evolutionary history of behavior. Topics to be surveyed will include:

* Vitalist *vs* empiricist views of behavior
* Idealist *vs* materialist views of "mind"
* Behavior and self-regulating systems
* Cellular and physiological basis of behavior
* Anatomical basis of behavior * Sense-organs and perception * Information-processing in nervous systems * The nature of drives in man and animals * The nature of "instinct" * The biological basis of memory and learning * Imprinting * The biology of emotions * The biology of sleep and arousal * The nature of animal hypnosis * The evolution of behavior * The evolution of intelligence and "mind" * Glands and brains: the psychobiology of "stress" * Drugs and behavior * Medicine, the control of mind and behavior.

The laboratory will include dissections, physiological studies, brain-wave studies, conditioning experiments, and behavior analysis.

Hours of class per week: 3. Hours of lab per week: 3.

BI 175 Field Biology **4 s.h.**

An intensive field program stressing terrestrial and aquatic ecology. The course will outline the interrelationship between the biotic community and its physical environment. Where pertinent, the effect of pollution on this relationship will be stressed. Topics to be covered will include: *The scope of ecology *The eco-system *Sampling techniques and statistical analysis of sampling data *Microclimato-logical effects *Use and development of identification keys *Phoytosocilogical analysis of Terrestrial Vegetation *Terrestrial energy cycles (food chains and food webs) *Plant and animal succession *Human energy production as a process in the biosphere *The morphometry and morphology of lakes and streams *Properties of water *Hydrologic cycles of lakes and streams *Oxygen concentration in lakes and streams and its effect on the biotic community *Mineral cycles of lakes and streams *The hydromechanics of plankton *Energy cycles of lakes and streams (typical).

Hours of class per week: 3. Hours of lab per week: 3.

BI 176 Ecology **3 s.h.**

The interrelationship between living systems and their physical environment. Emphasis will be placed on the understanding of different eco-systems, their balance and dynamics. Man's role as a member of the biosphere will be stressed.

Prerequisite: SC 141, BI 171, or permission of instructor. Hours of class per week: 3. Field trips will be taken.

BI 181 Anatomy and Physiology **4 s.h.**

The study of anatomy and physiology stressing the structure of the vertebrate body with reference to man. Emphasis is placed on the integrated development of structure and function in man with special reference to cellular, skeletal, muscular, digestive, respiratory, and endocrine function.

Hours of class per week: 3. Hours of lab per week: 3.

BI 182 Anatomy and Physiology **4 s.h.**

The study of anatomy and physiology stressing the function of vertebrate organ systems with special reference to those of man. Emphasis is placed on the function of muscle contractions, metabolism, electrolytic balance, surface phenomenon, excitation, and conduction as they are related to the function in the organ system.

Prerequisite: BI 181. Hours of class per week: 3. Hours of lab per week: 3.

BI 282 Microbiology **4 s.h.**

This course explores the morphology, physiology, and ecology of the major groups of microorganisms. Emphasis will be placed upon recent developments in the field of disease, immunology, and industrial applications. The laboratory will illustrate latest techniques in identification, culturing, and isolation of microbes as well as modern applications of microbiology.

Hours of class per week: 3. Hours of lab per week: 3.

Chemistry

CH 173-174 Fundamentals of Chemistry **4 s.h. each semester**

A course in the fundamentals of chemistry stressing basic principles. Topics included are: atomic theory, thermochemistry, thermo-dynamics, periodicity, states of matter, chemical bonding, organic chemistry, solutions, oxidation-reduction reactions, chemical equilibrium, kinetic theory, acid-base reactions, and electrochemistry.

Hours of class per week: 3. Hours of lab per week: 3.

Construction Technology

CT 121 Introdution to Building Trades and Construction Materials **3 s.h.**

A basic course in construction materials and methods. Study of timber, steel, masonry, concrete, and other materials used in construction. Construction methods are studied to acquaint the student with field practices.

Hours of class per week: 3.

CT 122 Light Frame Construction **3 s.h.**

A study of construction materials, practices, equipment and terminology relating specifically to light frame construction. Includes forming and building codes for general structural components from foundations through rough framing.

Prerequisite: Concurrent registration in CT 121. Hours of class per week: 2. Hours of lab per week: 3.

CT 124 Construction **3 s.h.**

A study of construction, materials, practices, equipment and terminology relating specifically to non-wood structural components in light frame and light commercial construction. General structural components include foundations, unit masonry construction, reinforcing steel, and applicable building costs.

Prerequisite: CT 121. Hours of class per week: 2. Hours of lab per week: 3.

CT 125 Construction Equipment **3 s.h.**

A course in the basic selection operation, maintenance and repair of medium and heavy construction equipment. The use of machines in grading and other construction techniques will be emphasized.

Prerequisite: CT 121. Hours of class per week: 2. Hours of lab per week: 2.

CT 126 Plumbing and Climate Control **3 s.h.**

A basic course in plumbing and climate control, including use of tools, basic lead working, steam and hot water heating, water distribution, venting drainage, and general installation, maintenance, and repair.

Hours of class per week: 2. Hours of lab per week: 3.

CT 127 Construction Project and Design I **3 s.h.**

To provide each student with the opportunity to design, engineer and build a project which combines many elements of construction. The student begins by completing a set of working drawings including plan, section details, notes and specifications. A three-dimensional model is then constructed using the materials, methods and techniques stated in the specifications.

Prerequisite: CT 122, MD 180. Hours of class per week: 2. Hours of lab per week: 2.

CT 128 Construction Estimating **3 s.h.**

A study of the elements of cost of construction. Includes analysis of procedures in recording quantity take off, labor factors and overhead; use of check lists, cost records, summaries and working drawings; bidding practices of the construction industry; sub contracts; critical path method.

Prerequisite: CT 121, CT 122, CT 124. Hours of class per week: 3.

CT 129 Electrical Construction **3 s.h.**

A course dealing with installation of wiring, including armored cable, wiremold, and romex; installation of wiring boxes, light fixtures, rigid metal conduit and electrical metallic tubing and connectors, and wiring such systems.

Prerequisite: EL 125. Hours of class per week: 2. Hours of lab per week: 2.

CT 130 Construction Project and Design II **3 s.h.**

A continuation of CT 127. The student actually builds, using the specifications stated in his working drawing for the project which he has designed.

Prerequisite: CT 125, CT 126, CT 127 and/or concurrent registration in CT 129. Hours of class per week: 2. Hours of lab per week: 2.

Electricity and Electronics

EL 125 Electricity **4 s.h.**

This pilot course in the Electrical Technology curriculum investigates the fundamental concepts of voltage, current, and power as applied to both AC (single phase) and DC circuits. The nature of resistance, inductance, and capacitance is studied. Fundamental circuit analysis is developed by the application of the basic laws and theorems to functional electric circuits. This course also includes a study of applicable electrical instrumentation. The practical application is stressed throughout the course.

Prerequisite: High School Algebra, MA 161 Requisite. Hours of class per week: 3. Hours of lab per week: 3.

EL 126 Electricity **1 s.h.**

EL 126 is a continuation of EL 125 during which the nature of Polyphase systems is studied. The transient response of elementary circuits is developed and the response of electric circuits having non-sinusoidal excitations is studied. Practical application of these concepts is emphasized.

Prerequisite: EL 125 and MA 161, MA 162 Requisite course. Hours of class per week: 1. Hours of lab per week: 2.

EL 127 Instrumentation **1 s.h.**

During this course the basic description related to the instrument used in the electronics field is developed. Specific emphasis is placed

on the utility of the oscilloscope, electronic voltmeters, signal generators, and component testing instruments. A generalized study of the internal circuitry of these devices is conducted so that the student may utilize these instruments in a most knowledgeable manner.

Prerequisite: none. Hours of lab per week: 2.

EL 128 Electrical Devices **2 s.h.**

During this course the operational principles and electrical characteristics of devices commonly used in the electrical field are studied. The characteristics of the vacuum diode, triode, tetrode, and pentode and cathode ray tube are surveyed. The parameters of solid state devices such as the semiconductor diodes, the bipolar junction transistor, field effect transistor, the diac, triac, and varactor, thyristor, and silicon controlled rectifiers are also developed. In addition, the performance of basic electro-mechanical transducers and temperature, pressure, humidity sensors is also conveyed.

Prerequisite: PH 172. Hours of class per week: 1. Hours of lab per week: 2.

EL 229 Electronics **5 s.h.**

This course introduces the student to electronics through the study of basic electronic circuits used in the electronics field. Specific circuits investigated include the rectifiers, filters, and regulators, amplifying circuits using both vacuum tubes and/or transistor circuits including their parameters and design limitations. Graphical and analytical analysis of these circuits and methods of coupling are also studied. Principles and application of feedback are introduced as applied to common devices.

Prerequisite: EL 126, EL 127. Hours of class per week: 4. Hours of lab per week: 3.

EL 230 Electronics **5 s.h.**

EL 230 is a continuation of EL 229. During this course the operation of special purpose amplifiers and oscillators is introduced. An investigation of high-frequency amplifiers and oscillators and basic computing circuitry is also developed. Application of these devices to communication electronics is explored through the investigation and application of AM and FM communication technique.

Prerequisite: EL 229. Hours of Class per week: 4. Hours of lab per week: 3.

EL 231 Electric Machines **3 s.h.**

EL 231 is concerned with the construction and operational characteristics of rotating machinery including both AC and DC motors and generators as well as the transformer. Primary concern is directed at the basic principles of operation of associated circuitry including speed control and ratings of these devices. Both single phase and polyphase machinery is studied as related to applicable testing procedures and efficiencies and utility.

Prerequisite: EL 125. Hours of class per week: 2. Hours of lab per week: 3.

EL 232 Computers **4 s.h.**

During this course the fundamental concepts of digital computing circuitry is studied with emphasis on solid state functional units, blocks, and subsystems. Arithmetic, switching, and logic circuits required in many technological applications are studied. The circuits required to perform the functions of memory, storage, input and output are also studied. Experiments cover the investigation of basic logic building blocks emphasizing the use of modern test equipment.

Prerequisite: EL 126, EL 128. Hours of class per week: 3. Hours of lab per week: 3.

EL 233 Laboratory Project **3 s.h.**

During this course the student is encouraged to build, design, or fabricate electrical or electronic equipment which would be useful to himself or the college, or to participate in some activity which would enhance his experience as a technician. Although this time would frequently be used in the laboratory constructing a particular project, this requirement may also be satisfied by association with an employer whose activity is oriented to the employment of the technician upon graduation. Such an activity, however, must be approved by the faculty of the curriculum so that appropriate credit can be awarded to this student.

Prerquisite: EL 229. Hors of class per week: 2. Hours of lab per week: 3.

EL 234 Laboratory Project **3 s.h.**

This continuation of EL 233, Laboratory Project, is provided to enable the student to have specific contact in the area of his specialization. During this course the student is encouraged to build, design, or fabricate electrical or electronic equipment which would be useful to himself or the college or to partici-

pate in some activity which would enhance his experience as a technician. Although this time would frequently be used in the laboratory constructing a particular project, this period may also be used with an employer whose activity is oriented to the employment of the technician upon graduation. Such an activity must be approved by the faculty of the curriculum.

Prerequisite: EL 233. Hours of class per week: 2. Hours of lab per week: 3.

EL 237 Home Technician **3 s.h.**

A core of knowledge that every man should have about the upkeep and improvement of his home, divided into four major areas:

I wiring
II plumbing and heating
III building and remodeling
IV appliances

Only one major area will be taught each time it is offered.

Hours of class per week: 3.

Food Service Administration

FS 122 Food Selection and Preparation **3 s.h.**

An introduction into the fundamental skills required for proper food selection, preparation, and storage. The relationship between proper preparation and storage and nutritional value will be emphasized. This course will utilize lecture demonstration and laboratory work.

Hours of class per week: 2. Hours of lab per week: 3.

FS 123 Introduction to Food Service **3 s.h.**

An introduction in modern commercial food service techniques emphasizing marketing, storage, management, and preparation of foods. The critical responsibility of presenting nutritious food to the public will be emphasized.

Hours of class per week: 3.

FS 124 Quantity Food Selection and Preparation **3 s.h.**

The course is designed to emphasize the unique requirements related to producing quantity food in a palatable fashion. Emphasis will be placed on such problems as bulk food production, menu making, cost evaluation, sanitation, and safety as they apply to quantity food production.

Prerequisite: FS 122. Hours of class per week: 2. Hours of lab per week: 3.

FS 126 Dietary Therapy **3 s.h.**

The course develops a relationship between health needs and specialized diets. Emphasis is placed on relating specific nutritional requirements for a variety of special dietetic needs.

Prerequisite: BI 121, FS 123. Hours of class per week: 2. Hours of lab per week: 3.

FS 127 Food Service Equipment **3 s.h.**

The course develops the skill and understanding in the use, maintenance and service of food service equipment. Use of commercial freezers, ovens, pressure cookers, steam tables, and other quantity food preparation equipment will be emphasized.

Prerequisite: BI 121, FS 123. Hours of class per week: 2. Hours of lab per week: 3.

FS 128 Food Purchasing and Cost Control **3 s.h.**

Techniques for analyzing and solving cost problems associated with purchasing quantity foods. Emphasis will be placed on marketing, buying practices, standards of quality, ideal storage conditions and duration.

Prerequisite: BI 121 and FS 123. Hours of class per week: 3.

FS 129 Quality Food Selection and Preparation **3 s.h.**

Basic procedures and techniques required to produce large volume quality food preparation. Emphasis will be placed on culinary qualities and environmental atmosphere required for the proper enjoyment of quality foods.

Prerequisite: FS 122 and FS 123. Hours of class per week: 2. Hours of lab per week: 3.

FS 130 Food Service Organization and Management **3 s.h.**

The course is designed to give food service majors the basic understanding necessary to organize a food service operation. Emphasis will be placed on budgetary management, cost equivalence, and employee management.

Prerequisite: FS 123. Hours of class per week: 3.

Geology

GL 171 Physical Geology **4 s.h.**

The first geology course for the potential geology or related science major. Topics include

basic mineralogy and crystallography, rocks, weathering and soil formation, erosion, glaciation, basic geomorphology, maps, surface and ground water, introduction to geologic structures and related topics. Field work, laboratory work and independent study or research is incorporated into the course.

Hours of class per week: 3. Hours of lab per week: 3.

GL 172 Historical Geology **4 s.h.**

The second basic geology course for the potential geology or related science major. Topics include the earth's origin and place in the planetary system, historical geology (especially of North America), paleontology, evolution, stratigraphy and geologic correlation, petroleum geology and others. The unique sedimentary and fossil record revealed in the Mohawk Valley and adjacent Catskill Mt. region will be explored in depth. Field trips, laboratory work and independent study or research is included in the course.

Prerequisite: GL 171. Hours of class per week: 3. Hours of lab per week: 3.

Graphic Arts

MD 171 Engineering Graphics **3 s.h.**

The course covers drafting work in lettering, use of drawing instruments including the drafting machine and parallel straight edge, geometrics, orthographic projection, cross sections, axonometric projection, intersections and sketching.

Hours of class per week: 4.

MD 176 Electrical Graphics **3 s.h.**

This electrical graphics course is concerned with basic drafting including orthographic projection, geometrics, cross sections, auxiliary projections, size description, and axonometric projections. Covers fastening devices, electrical symbols, various types of wiring diagrams, circuit board layout, charts, graphs, and problems involving the development of a complete set of plans and specifications for a piece of electrical equipment.

Hours of class per week: 3.

MD 180 Architectural Drafting and Blueprint Reading **3 s.h.**

Architectural drawing as related to functional planning of residence buildings, working drawings, including plans, elevations, section, details, notes, and specifications.

Hours of class per week: 2. Hours of lab per week: 3.

GA 101 Graphic Arts I **3 s.h.**

Introduction and orientation to graphic arts, to include the history of printing, basic principles and applications of offset printing, copy preparation, photography, stripping, opaquing, plate making, bindery, finishing procedures, and the operation of advanced types of presses.

Hours of class per week: 2. Hours of lab per week: 3.

GA 102 Visual Fundamentals **3 s.h.**

Study and application of the elements and principles of visual representation to produce line, shape, color, value, texture, contrast, emphasis, rhythmn and repetition. Study and use of form and space in geometric and organic designs.

Hours of class per week: 2. Hours of lab per week: 3.

GA 103 Graphic Arts II **3 s.h.**

Advanced techniques and applications in copy preparation, camera work, stripping and plate making, press work and bindery operations. Characteristics of various types of paper and ink. Maintenance of equipment is emphasized.

Prerequisite: GA 101. Hours of class per week: 2. Hours of lab per week: 3.

GA 104 Typography **3 s.h.**

Function of type, type identification, point size, and photocompositon. Copyfitting, proofreading, type composition variations will be emphasized, coupled with practical applications.

Prerequisite: GA 101. Hours of class per week: 2. Hours of lab per week: 3.

GA 105 Graphic Arts Layout and Printing Design **3 s.h.**

Planning and design principles used in the preparation of advertising copy for reproduction. Use of various methods, materials, and equipment in graphics for advertising and printing. Use of photographic reproductions and enlargements in projects.

Hours of class per week: 2. Hours of lab per week: 3.

GA 106 Graphic Arts Production **3 s.h.**

Use of laboratory equipment and techniques related to production problems in a controlled environment in various areas of visual communications.

Hours of class per week: 2. Hours of lab per week: 3.

GA 107 Production Management **3 s.h.**

Development of efficient methods from layout to finished product. Study of work schedules, materials, personnel and equipment, utilizing good management principles.

Hours of class per week: 2. Hours of lab per week: 3.

GA 108 Graphic Arts Seminar **3 s.h.**

Field trips, use of speakers from the industry and the exploration of opportunities in combination with special projects will be emphasized.

Hours of class per week: 3. Hours of lab per week: 2.

Natural Resources Conservation

NR 121 Fisheries and Wildlife Management **3 s.h.**

Introduction to the ecologic principles required for the maintenance and management of wildlife and fisheries resources. Habitat evaluation, game and fish management techniques, and wildlife inventories will be emphasized.

Hours of class per week: 2. Hours of lab per week: 3.

NR 122 Fisheries and Wildlife Management II **3 s.h.**

Utilization of required techniques in hydrographic mapping, limnologic sampling, and chemical equilibrium required for the maintenance of balanced fish and wildlife populations. Wildlife censusing, collection and research techniques, life histories, environmental requirements and habitats, nutritional requirements and infectious diseases of fish and wildlife will be stressed.

Prerequisite: NR 121. Hours of class per week: 2. Hours of lab per week: 3.

NR 123 Forest Management **3 s.h.**

The practices and principles involved in managing woodlands for timber, recreation, wildlife, and soil conservation values. Includes species identification and characteristics, tree development and growth, cutting practices, harvesting and marketing, reforestration, planting management and protection.

Prerequisite: NR 122. Hours of class per week: 3.

NR 124 Principles of Soils and Water **3 s.h.**

A study of the principles of erosion control, surface drainage and subsurface drainage; considers soil genesis, composition, classification, physical and chemical characteristics in relation to soil moisture, fertility and management.

Prerequisite: NR 122. Hours of class per week: 2. Hours of lab per week: 2.

NR 125 Outdoor Power Equipment **3 s.h.**

Designed to acquaint students with the operation, maintenance and repair of conservation-recreation tools and machines such as chain saws, snowplows, snowmobiles, motors and power equipment, management tools, ect.

Prerequisite: NR 122. Hours of class per week: 2. Hours of lab per week: 2.

NR 126 Research Seminar in Environmental Conservation and Outdoor Recreation **3 s.h.**

Seminar based on extensive reading and discussion of current research, philosophies, trends, problems, etc. related to conserving resources.

Prerequisite: NR 122. Hours of class per week: 3.

Nursing

NU 105 Nursing Science I **7 s.h.**

This course stresses the fundamentals of nursing. The student is introduced to the basic concepts and scientific principles of the biological and behavioral sciences that are applied to the nursing care of all patients. Adaptation of these principles and the planning of safe nursing care for individually selected patients is provided in hospitals and other health agencies.

Prerequisites: Completion of, or concurrent registration in BI 181, SS 291. Hours of class

per week: 5 including 1 hour seminar. Hours of lab per week: 6.

NU 106 Nursing Science II **7 s.h.**

The skills, concepts and principles introduced in NU 105 are further developed in this course. Normal growth and development is introduced with field trips to various schools and agencies included in the practice in addition to hospital experiences.

Prerequisites: NU 105; completion of, or concurrent registration in BI 182, SS 297. Hours of class per week: 5. Hours of lab per week: 6.

NU 205 Nursing Science III **9 s.h.**

This course emphasizes the nursing care of mothers and children as part of the family unit. Mental health and illness is included to show relationships between family members and individuals with society. Health needs throughout the child-bearing cycle and newborn period are stressed. Coordination of theory and practice in classroom, hospitals, community agencies and clinics are arranged.

Prerequisites: NU 106, completion of, or concurrent registration in BI 282. Hours of class per week: 5. Hours of lab per week: 10-12.

NU 206 Nursing Science IV **9 s.h.**

This course stresses complex health needs of children and adults who are ill. Principles, concepts and skills considered in the previous nursing courses are further developed and expanded in NU 206.

Prerequisites: NU 205. Hours of class per week: 6 including 1 hour seminar (total 6). Hours of lab per week: 10.

Physics

PH 161-162 Technical Physics
4 s.h. each semester

A hands-on approach to physics in which the classroom lectures and discussions are developed from laboratory investigations of the following topics:

1. measurement, errors, mechanical equilibrium
2. sound
3. thermal properties of matter
4. electricity and magnetism

Prerequisites: SC 121 or equivalent - see instructor. Hours of class per week: 3. Hours of lab per week: 3.

PH 171-172 Physics **4 s.h. each semester**

A comprehensive course stressing the basic concepts, principles, and laws of physics, designed for mathematics, science, and engineering majors. Areas covered are: Fundamentals of mechanics, heat and thermodynamics, electricity and magnetism, oscillations and waves. Atomic and nuclear physics is also briefly studied. Laboratory work is well integrated with lecture part of the course. Major emphasis is placed on developing the analytical ability of the student.

Prerequisite: Concurrent registration in MA 151, or MA 161-162, or MA 171-182-183, or MA 157-158. Hours of Class per week: 3. Hours of Lab per Week: 3.

PH 235 Mechanics **3 s.h.**

This course, designed for sophomore physics, engineering, and mathematics majors, presents the principles of statics of particles and rigid bodies and indicates the general methods of applying them to the solution of varied engineering problems and develops the analytical ability of the student. Topics covered are: vector algebra, forces and equilibrium, structures, plane and space trusses, frames and machines, centroids of lines, areas and volumes, flexible cables, beams with distributed loads, friction, area moments of inertia and mass moments of inertia, inertia tensor.

Prerequisites: PH 171 and MA 157; completion of or concurrent registration in MA 158. Hours of class per week: 3.

PH 236 Mechanics **3 s.h.**

This course, designed for sophomore physics, engineering, and mathematics majors, presents the principles of dynamics of particles and rigid bodies and indicates the general methods of applying them to the solution of varied engineering problems and develops the analytical ability of the student. Topics covered are: equations of motion, rectilinear and curvilinear motion, motion relative to translating and rotating axes, work and energy impulse and momentum, Euler equations, the gyroscope, central force motion, simple harmonic motion, damped oscillations and forced oscillations.

Prerequisites: PH 171 and MA 157-158. Hours of class per week: 3.

PH 271 Physics **4 s.h.**

This course is designed for sophomore

science, engineering, and mathematics majors. Topics covered are: Maxwell's equations and electromagnetic waves; special theory of relativity; dual nature of matter and electromagnetic radiation; basic interactions between matter and radiation - photoelectric effect, Compton effect, pair production and annihilation; X-Rays; electron diffraction, deBroglie waves; uncertainty principles; Bohr model of the atom, Pauli exclusion principle, and the periodic table; nuclear structure, radioactivity, nuclear fission and fusion reactions, beneficial and harmful effects of radiation. An independent laboratory project, in the field of student interest, is required. The laboratory project could be in any one or combinations of the following areas: vacuum tubes, semiconductor devices, photoelectric effect and devices, electron dynamics, atomic structure, nuclear decay, electromagnetic waves.

Prerequisites: PH 171-172 and MA 157-158. Hous of class per week: 4.

Science

SC 130 Science, Technology, and Society **3 s.h.**

A course designed to promote scientific and technological literacy and to develop information gathering and decision making skills in relation to socio-technological problems. Topics studied include: The nature of science, characteristics of scientific theories; nature of technology, inputs and outputs of technological developments; science-technology interaction, role of science and technology in removing man's myths about himself and the universe; systems approach to problem assessment, elements of decision making, optimization, modeling systems, feedback and stability; science-technology and social ills of today; matching technology to society and the environment; science-technology and natural disasters. How further advances in science and technology could help solve societal problems of today will be explored. The need for technology assessment to minimize the ill side effects of new technologies will be stressed.

Hours of Class Per Week: 2. Hours of Lab per week: 2.

SC 131 Environmental Physics **3 s.h.**

A course on the contemporary problems - energy, pollution, and depletion of natural resources - of our physical environment. Topics studied include: different forms of energy, our energy resources; methods of energy conversions and their by-products; environmental problems created by our increasing energy usage - thermal pollution, air pollution, solid waste, nuclear radiation pollution, noise pollution; pollution abatement; relative advantages and disadvantages of nuclear and fossil fuel power plants; the potential for more efficient use of energy; our depleting natural resources; energy sources of the future - breeder reactor, fusion reactor, solar energy, geothermal energy, tidal energy, energy from wastes; energy transmission methods of the future. Limits to exponential growth in energy usage, population, industrialization, use of natural resources, and pollution and the time scales for approaching these limits on the planet earth are studied to give the student a perspective on mankind's limits in space and time.

Prerequisites: none. Hours of class per week: 2. Hours of lab per week: 2.

SC 141 Introductory Biology **3 s.h.**

The human relevance and social implications of biology. The origin, evolution and nature of living systems. Cellular anatomy, physiology, and energetics discussed in genetic and ecological perspective. Observation, interpretation, and library research are integrated by means of written laboratory reports. Laboratory study of behavior of living organisms, microscopy of selected native flora and fauna, elemental experiments in biochemistry, biophysics and genetics are included.

Hours of class per week: 2. Hours of lab per week: 2.

SC 142 Introductory Biology **3 s.h.**

A biosystematic approach to plant and animal taxa, both living and extinct, utilizing representative fossils and live specimens when available. An understanding of man's origin and place in the biosphere is complemented by topics from comparative anatomy, physiology, and medicine as they relate to the human organism.

Observation, interpretation, and library research are integrated by means of written laboratory reports. Included are: dissection and micro-anatomy of representative invertebrates, vertebrates, and plants, field collection, identification, and study of plants and animals of biologic interest.

Hours of class per week: 2. Hours of lab per week: 2.

SC 143 Earth Systems **3 s.h.**

The materials, surface feature, internal structure and changes in the planet earth brought about by natural forces and by man. Emphasis on earth cycles and dynamics, including long and short range effects, on the environment resulting from human activity. Labs include introduction to rocks and minerals, topographic maps, and local field trips. For non-science majors.

2 lectures per week. Hours of lab per week: 3.

SC 144 The Ancient Earth **3 s.h.**

The history of the earth and the fossil record of life on earth. The course explores the dimension of time as revealed in the rocks of the earth's crust, and examines fossils both as an important tool in interpreting the earth's history and as the major evidence for organic evolution. Labs include the systematic study and identification of the major fossil groups, problems in rock correlation, and the study of local stratified rocks in the field. For non-science majors.

Hours of class per week: 2. Hours of lab per week: 3.

SC 145 The Universe of Man **3 s.h.**

An introductory course designed to give an overview of science, emphasizing the evolutionary nature of matter. The subject of "matter" will be discussed from its subatomic-particle state to the creation of the universe on the supramacro level; from the atom to the creation of life on the submicroscopic level; and finally through the evolutionary process to modern man and beyond. The course will integrate the disciplines of physics, chemistry, and biology and with an overall philosophical viewpoint stress the unity of living and the non-living nature of the universe. Lectures and discussions will be reinforced with class demonstrations and field trips.

Hours of class per week: 2. Hours of lab per week: 3.

SC 151 Introduction to Physical Anthropology **3 s.h.**

This course first introduces the discipline of anthropology and then uses the fossil evidence for hominid evolution in conjunction with the study of past and present primates as well as basic genetics to investigate current theory concerning the ascent of Homo sapiens. Archeology and prehistory combine to present an introduction to the behavior of Hunteng's gathering groups. Emphasis is continually on the interaction of Homo sapiens with the total environment.

Prerequisite: none. Hours of class per week: 2. Hours of lab and recitation per week: 2.

SC 299 Independent Study: Science Division **1-3 s.h.**

This course provides the opportunity for any student of Science to investigate areas not available in existing science courses. Students may contract to undertake 1-3 hours of independent study in a science area of their choosing, provided they obtain the major sponsorship of one professor in the Science Department and the minor sponsorship of two other science professors. A student electing independent study will be expected to confer weekly with his major sponsor, who will serve as his advisor throughout the duration of the study. A written report, to be read and approved by both the major and minor advisors, will be required. The student will also be expected to present an oral summary of his work before a Colloquium of the Science Division. Independent study will be elected on a pass-fail basis. However, in recognition of work of very high quality, a grade of "A" may be recorded on the student's transcript record of the work, at the discretion of the Science faculty. An abstract of the study shall be filed with the transcript also, and one copy of the written report shall be kept as a permanent record in the library.

Prerequisites: One semester completed at FMCC with an overall average of "B" or better, including at least one course in the Science Division. A "B" or better average in science courses already completed will be expected. These prerequisites may be waived in special cases by a simple majority vote of the Science Faculty.

Surveying

SU 101 Surveying I **3 s.h.**

Surveying I is an elementary course in Surveying. It includes fundamentals of plane surveying and emphasizes the use and care of leveling instruments. Linear measurements and theory and practice of leveling are studied in coordinated lecture and field work.

Prerequisite: Permission of Instructor. Hours of class per week: 1. Hours of lab per week: 4.

SOCIAL SCIENCES

History

SS 180 Contemporary Issues and Problems **3 s.h.**

This course will examine the major issues of concern to the American nation at the time the course will be offered. The student will be expected to keep abreast of current political, social, and economic developments. The staff involved in teaching the course will not only guide and direct the discussion, but will provide historical and theoretical conceptual frameworks for the discussions.

Prerequisite: Enrollment in an A.A.S. program.
Hours of class per week: 3.

SS 183 Modern Western Civilizations **3 s.h.**

An introductory course in Western Civilizations beginning around the tenth century. The course examines the major social, political, and economic ideas, and their contributions to the western heritage.

Hours of class per week: 3.

SS 184 Modern Western Civilizations **3 s.h.**

Follows the same basic plan as SS 183 and is a continuation of that course to the present. The course enables the student to identify contributions made to the western heritage, changing patterns of power in the western world, and their implications for the future.

Hours of class per week: 3.

SS 186 Black American History **3 s.h.**

A study of the historical background of Africans in America and their contributions and impact upon America. Emphasis shall be upon the last 100 years and the recent civil rights and Black Power movement.

Hours of class per week: 3.

SS 190 Media and 20th Century America **3 s.h.**

This course will examine the role that the media (books, newspapers, T.V.) have played in influencing American history. It will attempt to help students become critical in their assessment of material reported by the media, and encourage them to study events that have occurred as a result of conditions exposed by the media. Selected topics would include court trials, literature of the Progressive Era, T.V. speeches, local news.

Hours of class per week: 3.

SS 283 Survey of American History **3 s.h.**

A survey of the political, social, and intellectual development of the United States from the Colonial period to Reconstruction.

Hours of class per week: 3.

SS 284 Survey of American History **3 s.h.**

A continuation of SS 283 from Reconstruction to the present. Emphasis is placed on the changing character of the American society and its role in international affairs.

Hours of class per week: 3.

SS 285 The Soviet Union **3 s.h.**

A study is made of the social, political, and economic conditions in Czarist Russia prior to the 1917 Revolution to establish a common background. Emphasis is placed on a study of the Soviet Union since the Bolshevik Revolution with examination of Marxism, the Soviet government, the Communist part, and the Soviet Union in international affairs.

Prerequisite: 3 hours of Social Sciences.
Hours of class per week: 3.

SS 286 Twentieth Century Europe **3 s.h.**

The course begins with a study of the Treaty of Versailles and stresses the major political, social, economic, and intellectual movements and reactions to them in England, France, Germany, Italy and the Soviet Union.

Prerequisite: 6 hours of Social Sciences.
Hours of class per week: 3.

SS 289-290 Independent Study **3 s.h.**

This course affords the student an opportunity to select a problem for independent research under the guidance of a member of Social Sciences Division utilizing scholarly tools of research. An oral and documented written report are required. This course is conceived as an honors course and hence permission from the Division Chairman is mandatory prior to registration.

Prerequisite: 6 hours of Social Sciences.
Hours of class per week: 3.

SS 293 Diplomatic History of the United States Before 1900 **3 s.h.**

This course will examine the relations of the

United States with foreign nations from the American Revolution until the Spanish American War.

Prerequisite: SS 283. Hours of class per week: 3.

Political Science

SS 272 Comparative Political Systems 3 s.h.

A comparative analysis of major political institutions, processes, practices, and policy problems of government and politics in representative democratic, totalitarian, and modernizing political systems. The analysis will focus on the political systems of Great Britain, France, West Germany, the U.S.S.R., and The People's Republic of China.

Hours of class per week: 3.

SS 287 International Organizations 3 s.h.

Emphasis is on an examination of international organization with primary consideration of the United Nations. This involves a study of the major crises which have confronted the United Nations since its establishment and those which it presently faces: the use of the veto, the specialized agencies, and the constitutional and political issues involved in the question of Chinese membership. A two-day field trip to the United Nations in New York City is required.

Prerequisite: 3 hours of Social Sciences. Hours of class per week: 3.

SS 282 American Political System 3 s.h.

The objective of this course is to describe, analyze, and explain the American Political System as it actually works. The approach will be primarily behavioral and not institutional. The fundamental question of this course will be "Who Gets What, When, How" in American politics?

Hours of class per week: 3.

SS 383 Subnational Government and Politics 3 s.h.

An analysis of the multitude of governmental institutions and political practices at the sub-national level. The emphasis of the course will be on intergovernmental relations and on the the practical consideration of the ways sub-national governments — state, county, local- daily affect the activities of the average citizen. Attention will be paid not only to welfare, educational and taxing policies, but also to the growing problems of the metropolitan areas such as social unrest, environmental problems, financial crises, alienation, and the quality of life. The relationship between political institutions and practices and policy outputs will also be examined.

Prerequisite: SS 282 or permission of the instructor. Hours of class per week: 3.

SS 385 Community Power Structure 4 s.h.

An examination of conflicting theories concerning the power structure and decision-making apparatus in community politics, along with the study of related empirical data. Also, an analysis of democratic theories in view of recent empirical findings. The student will become directly involved in an empirical investigation.

Prerequisite: 3 credit hours of Political Science or Sociology. Hours of class per week: 3 (2 Hours Lab).

Psychology

SS 291 General Psychology 3 s.h.

A basic orientation in the psychology of human behavior is provided. A study of the aims and inter-relationships of heredity and environment as determiners of behavior as well as an investigation of learning, motivation, and the nature of emotion.

Hours of class per week: 3.

SS 292 Abnormal Psychology 3 s.h.

A consideration of the historical background of abnormal psychology, scope of abnormal disorders, definitions, descriptions, causation, development, and treatment approaches for major abnormalities of behavior.

Prerequisite: SS 291 and SS 297. Hours of class per week: 3.

(NOTE: At this time this course is only being offered through the Continuing Education Division).

SS 297 Developmental Psychology 3 s.h.

A systematic examination of the patterns of development and behavior changes which occur during each of the principal stages of life, i.e., childhood, adolescence, adulthood, and old age. Attention is given to cultural and social, as well as genetic forces affecting human development.

Prerequisite: SS 291 or permission of the instructor. Hours of class per week: 3.

SS 383 Personality Theories **3 s.h.**

A study of personality as a theoretical construct whih includes an organized system of structures and processes. Major models and how they are derived are used to pursue basic concepts of personality.

Prerequisite: SS 291 and SS 297 or permission of the instructor. Hours of class per week: 3.

(NOTE: At this time this course is only being offered through the Continuing Education Division.)

Sociology

SS 281 Introduction to Sociology **3 s.h.**

An introductory course designed to acquaint the student with the study of sociology as one of the sciences that deals with man in his relationships with the members of his society and the world in which he lives. The methods and objectives of sociological research, the varying patterns of social organization, and the study of society in relation to individual and group behavior are major areas of study.

Hours of class per week: 3.

SS 381 Social Problems **3 s.h.**

An attempt to explore our rapidly changing society through the sociological analysis of significant social problems including juvenile delinquency, adult crime, organized gambling, alcoholism, drug addiction, personality disorders, suicide, marital problems, and discrimination. The course will attempt to introduce theory and methods for studying social problems and techniques for understanding and coping with these problems.

Prerequisite: SS 281. Hours of class per week: 3.

SS 382 Political Sociology **3 s.h.**

This course will develop the application of sociological theory to the study of political systems, the process of adult and child political socialization, theories of assimilation and acculturation. Systems analysis as a method of explanation will be utilized.

Prerequisite: 6 hours of social sciences or permission of instructor. Hours of class per week: 3.

HEALTH AND PHYSICAL EDUCATION

100 Series-Service Program **1 s.h. each**

Courses are designed to provide the students with a variety of lifetime sports and fitness activities. Emphasis is on making fitness through physical activity a part of everyday living.

PE 110 Slimnastics and Physical Fitness
112 Introduction to Archery, Tennis, Paddleball
113 Field Archery and Hunting
114 Canoeing & Hiking
116 Golf — Racket Activities
117 Volleyball & Paddleball
119 Racket Activities
120 Tennis & Aquatics
122 Tennis & Bowling
123 Bowling & Aquatics
125 Skiing (Beginning)
126 Skiing (Advanced)
128 Dance (Modern & Jazz)
130 Seminar for Veterans (Permission of Instructor)
141 Beginning Swimming
142 Intermediate Swimming
143 Lifesaving*
144 Skin & Snorkel Diving
145 Water Sports
149 Water Safety Instructors*

*Prerequisite

160 Series-Majors Program **1 s.h. each**

These activity courses are designed for the H.P.E.R. major. Special emphasis is placed on student performance and teaching techniques.

PE 161 Tumbling & Gymnastics (men)
162 Tumbling & Gymnastics (women)
165 Soccer & Wrestling
166 Softball & Fitness
168 Dance - Folk and Square
241 General Aquatics for P.E. Majors

PE 141 Beginning Swimming **1 s.h.**

This course is designed for students who are either non-swimmers or marginal swimmers as determined by preliminary screening. The course objective is to have the student acquire enough basic knowledge and skill to effectively protect themselves and assist others, when in the proximity of water, under conditions of danger and stress. (student option)

Prerequisite: Satisfactory medical examination. Hours of class per week: 2.

PE 142 Intermediate Swimming **1 s.h.**

This course is designed for the student who has completed basic swimming or is capable of swimming with confidence. Intermediate swimming will include the learning of the four competitive swimming strokes. The basic rudiments of diving will also be taught.

Prerequisite: Basic swimming. Hours of class per week: 2.

PE 143 Lifesaving and Water Safety **1 s.h.**

A course structured for the highly skilled swimmer. All students who pass the initial screening criteria must also pass an additional aquatic skill test to be eligible to enroll in this course. Basically this individual should be able to do all the basic and advanced swimming strokes and have a reasonable level of stamina and endurance.

Upon successful completion of the course a student, based on his newly acquired skill, will be able to effectively and efficiently assist or rescue a drowning individual. This class will be co-ed.

Prerequisite: Satisfactorily pass the aquatic screening test, and satisfactory medical examination. Hours of class per week: 2.

PE 144 Skin and Snorkel Diving **1 s.h.**

A preliminary lead-up course to Scuba. Students will learn all the fundamental skills and basic concepts associated with self contained underwater breathing apparatus. (Scuba)

Principles of Scuba Diving, safety, emergency techniques, physical endurance, (associated with diving) and some of the basic physics and medical aspects of diving will be taught. PE 144 will carry no certification.

Hours of class per week: 2.

PE 145 Water Sports **1 s.h.**

A course for the aquatic minded aquanaut and aquanet in the area of water sports.

The student who registers for this course can anticipate learning and playing water basketball, water polo and water volleyball.

Since each of these sports are played in shallow and deep water, all participants should be able to swim. Upon completion of the course each student can anticipate considerable improvement in their general overall physical fitness.

Hours of class per week: 2.

PE 149 Water Safety Instructors **1 s.h.**

This course will be a sequence to Senior Lifesaving. Students enrolling for W.S.I. will be afforded instruction on teaching techniques. They will be involved in at least one independent study project and their practical work will include V.T.R. self-evaluation. Each candidate will have student teaching responsibilities and evaluations.

Hours of class per week: 2.

PE 201 Introduction to Health, Physical Education and Recreation **3 s.h.**

Provides an historical background and understanding of the role of health and physical education in education. Individual objectives and qualifications are reviewed, as are the opportunities in the profession.

Hours of class per week: 3.

PE 231 Camping **3 s.h.**

Selected, guided experiences in camping including nature and conservation, camp craft, nature craft, waterways, and conduct and management of resident and day camps.

Hours of class per week: 3.

PE 235 Outdoor Education **3 s.h.**

This course is designed for students interested in management of wildlife and natural resources in New York State. Topics to be included are fisheries, wildlife management, and land control Field trips will be coordinated with the New York State Department of Fish and Game and the Conservation Department. Special emphasis will be n Federal and State controls.

Hours of class per week: 3.

PE 241 General Aquatics For Physical Education Majors **1 s.h.**

This required course is a broad introduction to aquatic activities including: Basic strokes, simple forms of rescue, survival swimming, springboards diving, small craft, mask-snorkel-fins, and the American National Red Cross Swimming Program.

Hours of class per week: 2.

PE 244 Scuba — Vehicle to Under-Sea Discovery **3 s.h.**

An all encompassing course on (Scuba) self-contained breathing apparatus to include: The physics of diving, medical hazards of diving,

compressed gasses, equipment, aquatic environments, skill of diving, safety and first aid, dangerous marine life, U.S. Navy decompression tables, planning a dive, etc.

Hours of class per week: 3.

PE 251 Lifetime Sports **2 s.h.**

Philosophy and instructional techniques in two of the lifetime sports. Activities include golf and badminton.

Hours of class per week: 2.

PE 252 Lifetime Sports **2 s.h.**

Philosophy and instructional techniques in two of the lifetime sports. Activities include bowling and tennis.

Hours of class per week: 2.

PE 253 Lifetime Sports **2 s.h.**

Philosophy and instructional techniques in two of the lifetime sports. Activities include volleyball and archery.

Hours of class per week: 2.

PE 299 Independent study in Physical Education **1-3 s.h.**

Will provide an opportunity for Physical Education majors to investigate areas of study not available in the existing Physical Education curriculum and related courses.

HE 135 Personal Health **3 s.h.**

A one-semester course dealing with the application of scientific principles of effective, healthful living. Topics include critical areas of health, the cause and effects of health problems, and the practical application of this knowledge toward positive action. Drugs as well as environmental health, family hygiene, mental health, and social diseases will be covered.

Hours of class per week: 3.

HE 136 First Aid & Safety Education **3 s.h.**

A one-semester course to include accident causation and prevention in industry, recreation, home, and community. The Red Cross standard and advanced first aid certification will be granted following satisfactory completion of an emergency unit as outlined by the American National Red Cross.

Hours of class per week: 3.

HE 235 Community Health **3 s.h.**

A detailed investigation of communicable disease including definition, transmission, and control in respect to prevention of disease and promotion of health. Organized public health activities as conducted by local, state, national and international agencies.

An introduction to air and water pollution control, including effects and sources of pollution. Field trips are arranged.

Hours of class per week: 3.

HE 236 First Aid Instructor **1 s.h.**

A course designed for the training of First Aid instructors. Standards for the course are set forth by the American National Red Cross.

Hours of class per week: 1.

HE 299 Independent study in Health Education **1-3 s.h.**

Will provide an opportunity for students interested in health related fields to investigate areas of study not available in the existing Health Education curriculum and related courses.

EDUCATIONAL RESOURCES

ER 100 Library Research Methods **3 s.h.**

The student will learn to recognize the many specialized tools of a library learning center and to use these tools needed to do research, preparing an introductory statement and bibliography. A paper will then be developed using module questions covering a variety of disciplinary areas or using subject of the student's own choice. The student will also work in the library in reference and circulation and/or in technical processing to gain some understanding of materials, delivery of information, and communications skills. These experiences should result in the student gaining increased use of search methods using library tools and how to function comfortably in a library-learning center environment.

Hours of class per week: 3.

ER 101 Principles of Photography **3 s.h.**

The study of photographic history, basics of taking pictures, (camera operation, exposure, films, filters, flash, composition), development and usage of pictorial reports and audio-pictorial

(multimedia) reports.

Hours of class per week: 2. Hours of lab per week: 3.

ER 102 Advanced Photography **3 s.h.**

Advanced camera techniques used for illustrating photo reports in commercial fields; emphasis on balance of color, lighting, composition close-up photography, macro-photography, uses of motion and still photography; lenses; darkroom techniques for black-and-white and color.

Prerequisite: ER 101. Hours of class per week: 2. Hours of lab per week: 3.

ER 103 Commercial Photography **3 s.h.**

Emphasis on techniques of and practice of advanced photo techniques used in industry; halftone negatives, color separation negatives and positives; types of proofs (diazo, color key, types of contacts); presentations to clients; platemaking. Both laboratory and field visitations, in order to familiarize the student with advanced equipment and methods.

Prerequisite: ER 101. Hours of class per week: 2. Hours of lab per week: 3.

ER 104 Seminar in Photography **3 s.h.**

Emphasis on field trips, use of speakers from industry, exploration of opportunities in combination with special projects.

Prerequisites: ER 101 plus one advanced photography course. Hours of class per week: 2. Hours of lab per week: 3.

CRIMINAL JUSTICE

CJ Police Administration I **3 s.h.**

Designed to develop basic understanding of the traditional hierarchical structure of police organizations; chain of command; responsibilities, powers and duties of police officers and police adminstrators; review of police leadership, courtesy and public relations.

Hours of class per week: 3.

CJ 102 Police Administration II **3 s.h.**

Analysis of the functions of specialized units within the police organizations, including police planning and research patrol operations, internal affairs, and public relations. Principles of personnel management and supervision. Police labor relations and consideration of alternative and comparative models of law enforcement organization.

Prerequisite: CJ 101. Hours of class per week: 3.

CJ 103 Criminal Law I **3 s.h.**

A survey of the history and philosophy of criminal law; the scope, purpose, definition and classification of modern criminal law; offenses against the person, property offenses; and a discussion of the relationship between the Constitutional rights of the individual and the protection of society.

Hours of class per week: 3.

CJ 104 Criminal Law II **3 s.h.**

Comprehensive analysis of the rules of evidence and criminal procedural law: judicial notice, presumption, real and circumstantial evidence, burden of proof, province of court and jury, documentary evidence, hearsay, confessions and admissions: laws of arrest, search and seisure.

Prerequisite: CJ 103. Hours of class per week: 3.

CJ 105 Principles of Criminal Investigation **3 s.h.**

An analysis of the nature and purpose of criminal investigation. Discussion will include various methods of investigation, the interview, and the interrogation of witnesses and suspects, collection and perservation of evidence, use of informants, techniques of surveillance and special investigation techniques; methods used in police science laboratory, ballistics, documents, serology, photography, and related forensic services.

Hours of class per week: 3.

CJ 106 Introduction to Law Enforcement and Criminal Justice **3 s.h.**

A survey of the historical and philosophical development of law enforcement; and analysis of the court system; the criminal justice process; Constitutional limitations placed upon the criminal justice system, emphasis given to the inter-relationship between these agencies and future trends in law enforcement.

Hours of class per week: 3.

CJ 107 Police - Community Relations **3 s.h.**

Survey of the numerous and complex factors

involved in the area of human rights. Topics covered: Controlling racial prejudice in the community; the role of police as professionals; and examination of prejudice and discrimination and their effects and implications for police in a changing and interacting society. The history and development of civil rights and liberties is surveyed.

Hours of class per week: 3.

CJ 108 Introduction to Juvenile Delinquency **3 s.h.**

Consideration of the methods and philosophy of the juvenile court system, police programs for the prevention and control of juvenile delinquency and the role of various social work agencies in the care and treatment of juveniles. Special attention will be given to police techniques utilized in handling juveniles with special emphasis on the utilization of existing community resources. The course will examine prevailing professional philosophy, existing law, public policy, and knowledge of current delinquent behavior theories.

Hours of class per week: 3.

CJ 109 Criminology **3 s.h.**

A survey of the nature and scope of prevalent forms of criminology. This course will consider the major theories of criminal conduct drawn from psychological, social and cultural modes of explanation. A discussion of various classifications and typologies and the role of crime statistics will be included, as well as the relevancy of these factors for understanding, prevention, control and prediction.

Hours of class per week: 3.

CJ 110 Traffic Enforcement Administration **3 s.h.**

Examination of the United States Transportation system emphasizing effective, safe operation, organization for traffic control, accident investigation and analysis, communications aspects of highway traffic administration, public support organizations, traffic safety survey.

Hours of class per week: 3.

HUMAN DEVELOPMENT

HD 100 Studies of the Person **3 s.h.**

This interdisciplinary course offers the student an opportunity to increase his self-understanding and move toward full development of his personal potential as he explores the question of what it means to be a fully functioning human being. Course content is drawn from a variety of academic disciplines and is organized around issues of emotional development, such as:

1. Identity (Finding answers to the question, "Who am I?")
2. Connectedness (Relationships with other people and the environment)
3. Power (Exercizing control over one's life)

Topics include: Self-actualization and the fully functioning person as seen by: Primitive societies, the Greeks, and Renaissance thinkers as well as modern philosophers and psychologists; Man in Nature (religious, philosophical, sociologial and biological perspectives); Values and Life-style; Sex-roles; Interpersonal Communication; Decision-making and Conflict Management; the Human Body and Sensory Awareness; Life-planning.

Team taught by counselors and other members of the teaching faculty, this course draws heavily from the area of the behavioral sciences but also includes material drawn from: literature, philosophy and biology.

In addition to reading assignments and lectures, students participate in small group discussions and other interaction experiences to help them relate class material directly to their own lives. In a further effort to individualize learning, each student meets with one of the instructors for two individual conferences during the semester.

Limited to 15 students per section. Hours of class per week: 3.

HD 130 Supervised Community Service **3 s.h.**

Students are assigned to work with clients in human service agencies in the community (sheltered Workshops for Retarded Adults, Special Education classes in the schools, Correctional Institutions, Youth Centers). In addition to their client contact, they attend regularly scheduled class sessions and individual conferences with the instructor for the purpose of reflecting upon their experiences and integrating the insights they have gained in their work. Students also complete selected readings and short papers related to their human service experience.

It is expected that students will acquire learning in the following areas:

1. The dynamics of "helping relationships"
2. The function of community human service agencies.
3. Increased self-awareness, particularly with

respect to careers in the area of human services.

Prerequisites: Permission of the instructor.
Hours of class per week: 1.

HD 150 Reading and Learning Skills **3 s.h.**

This course includes techniques designed to improve comprehension, vocabulary, reading rate and critical reading. Various learning skills, such as: note-taking, study schedules, writing research papers, Xerox Listening Lab and techniques of study for different courses will also be taught.

Current research in reading indicates that an individual's ability to read is closely related to his self-concept. Reading assignments and class presentations relate to students' "real life" concerns and are designed to facilitate their emotional development.

Hours of class per week: 3.

HD 221 Human Relations and Group Dynamics **3 s.h.**

This course is designed to assist students in acquiring knowledge and skills which will enable them to communicate more effectively with other people, individually and in small groups. Learning activities include group process observation, role-playing and human relations skill training as well as film and lecture presentations on theories of interpersonal communication (Berne, Harris, Bales, Lewin, Palmer, Rogers, Schutz, Gordon, Gibb, Barnlund). The course includes a fairly substantial unit on Transactional Analysis.

Hours of class per week: 3.

HD 021 Personal Development **3 s.h.**

A seminar designed to help individuals take positive action in selecting and accomplishing their goals. The emphasis is on discovering personal strengths and abilities which the individual possesses but which he may not be using fully. The intent of the program is to help the individual decide for himself what he wants to do and then to devise his own system for doing it.

Hours of class per week: 3.

HD 122 Educational and Vocational Exploration **3 s.h.**

A seminar designed to aid students in formulating educational and vocational goals.

Group discussion includes in-depth examination of various occupations and professions in terms of: educational requirements, job demands, and satisfactory advancement potential, financial regards, and other aspects of employment.

Hours of class per week: 3.