

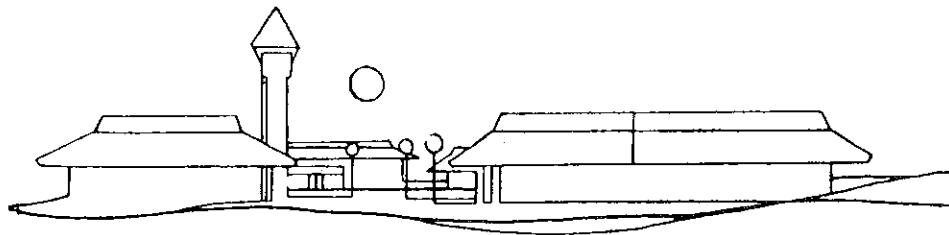
FULTON-MONTGOMERY COMMUNITY COLLEGE

Johnstown, New York 12095

(518) 762-4651/829-7321

A Unit of the State University of New York
Sponsored by the Counties of Fulton and Montgomery

1987-1989



Fulton-Montgomery Community College is an equal Opportunity, affirmative action institution. Programs and services at Fulton-Montgomery Community College are open to all without regard to sex, race, color, national origin or handicap.

LIBERAL ARTS

General Studies [A.A.]

A.P.C. - 250

This program is a university parallel program designed for students who intend to transfer to a four year institution. This program can be used either by students who are unsure of their plans and need maximum flexibility to explore their options or by students who wish to develop their curriculums within the requirements of the four year institution to which they intend to transfer.

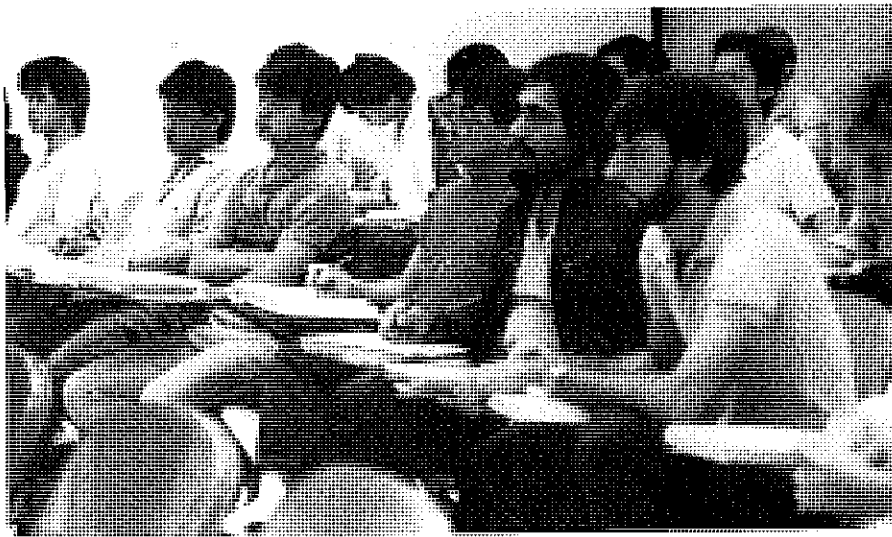
FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Mathematics Elective	3-4	Science Elective	3-4
Electives*	6	Electives*	6
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Humanities Elective	3	Humanities Elective	3
Math/Science Elective	3-4	Social Science Elective	3
Electives*	<u>9</u>	Electives*	<u>9</u>
	15-16		15

*At least sixteen hours of free electives must be selected from courses designated as Liberal Arts. These Liberal Arts courses should be selected so as to produce a balance among the areas of Humanities, Social Sciences, and Math/Science.



Humanities and Social Sciences [A.A.]

APC-201

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. Examples of such study are given on this page.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	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	<u>1</u>	Physical Education	<u>1</u>
	16-18		16-18

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
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*	<u>3-4</u>	Elective*	<u>3-4</u>
	15-18		15-18

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

Students who wish to concentrate in one of the following areas should select from the courses identified below:

American Studies

*SS 264, 282, 283, 284, 383

**EN 233, 234

Theater

TH 101, 102, 105, 201, 202

EN 243, 245

MU 101, 102, 201

Behavioral Science

* SS 281, 291, and one (1) political science elective should be taken the first year of study. Additionally, three (3) other courses chosen from the fields of psychology, sociology or political science should be completed. Mathematics elective should include MA 160

Human Services [A.A.S.]

APC-604

The Human Services program is designed for those students who intend to work, or are already working, in one of the many human services agencies in contemporary society. Such agencies include, but are not limited to, youth services agencies; agencies dealing with the handicapped; agencies dealing with the aged; and health related agencies. The program combines formal college course work with human service field experiences through internships, preparing graduates to move directly into employment. The program is flexible so that students may choose the courses and field experiences that are most appropriate to his/her interests and to his/her particular career goals.

This program is also designed for students planning on transferring to four-year colleges to earn a baccalaureate degree in human services related programs.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II or	
SS 291 General Psychology	3	EN 127 Technical English	3
SS 281 Introduction to Sociology	3	Elective*	3
SC 141 Intro. to Biology or		MA 160 Statistics or Math Elective	3-4
BI 181 Anatomy and Physiology	3-4	Human Services Elective**	3
HS 110 Intro. to Human Services	3	Physical Education	1
Physical Education	1	SS 297 Developmental Psychology	3
	<u>16-17</u>		<u>16-17</u>

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
HS 298 Human Services Internship	3	HS 299 Human Services Internship	3
HS 291 Human Service Skills I	1	HS 292 Human Service Skills II	1
HD 221 Human Relations and		Elective*	3
Group Dynamics	3	Elective*	3
Elective*	3	Elective***	3
Human Service Elective**	3	Elective	3
Elective***	3		<u>16</u>
	<u>16</u>		

Students planning to transfer to a four-year college should select electives to meet the requirements of the transfer institution.

*At least four electives must be taken from the following: CJ 108, SS 292, SS 387, SS 264, SS 386, SS 282, SS 383, SS 294, HD 208, HE 235.

**Human Service Electives: HS 211, HS 251, SS 299.

***Suggested Electives: Foreign Languages.

Fine Arts/Visual [A.A.] APC-664

This program is designed for students who wish to transfer and continue their studies for the Bachelor of Arts, Bachelor of Science, or Bachelor of Fine Arts degree, or for students seeking immediate employment. The opportunity is provided to develop basic concepts and skills in a wide variety of media while concentrating on the field of Art.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Science Elective	3-4	Math Elective	3-4
AR 210 Drawing I	3	AR 211 Drawing II	3
AR 150 2D Design	3	AR 160 3D Design	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Humanities Elective	3	Social Science Elective	3
Math/Science Elective	3-4	AR 300 Art Seminar	3
AR 220 Painting	3	Art Elective	3
Art Elective	3	Electives*	<u>6</u>
Elective*	<u>3</u>		15
	15-16		

*Electives should be selected to conform to the program requirements of the college or university to which the student plans to transfer.



Crafts Management [A.A.S.]

APC-671

Crafts Management is designed for students who wish to learn how to design, produce, and sell quality craft products. This program also provides the flexibility to allow students to transfer to baccalaureate degree programs in related fields. This program will meet the needs of the student that desires to achieve the background necessary to begin their own business in any artistic venture, i.e. craft shop, pottery shop, printmaking shop, etc.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Sciences Elective	3	Social Science Elective	3
Science Elective	3-4	BU 103 Math of Bus. Finance	3
AR 210 Drawing I	3	AR 211 Drawing II	3
AR 150 2D Design	3	AR 160 3D Design	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-17		16

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Elective*	3	Elective*	3
Elective*	3	Elective*	3
BU 121 Accounting	3	BU 165 Small Business Manag.	3
Mathematics Elective	3-4	BU 171 Business Law	3
Elective*	<u>3</u>	Elective	<u>3</u>
	15-16		15

*Four Electives must be selected from the following: AR 100, AR 200, AR 220, AR 221, AR 275, AR 300, ER 101, ER 102, ER 103, ER 150, ER 151.

**Suggested Elective: BU 140, BU 141, or BU 137.

Business Administration [A.S.] APC-671

This program is designed to prepare students to transfer to a four-year institution to complete a baccalaureate degree in business. The flexibility of this program permits students to meet the requirements of their intended transfer institutions. Students transferring to four-year institutions may specialize there in a particular field such as finance, marketing, business management, or business education.

The following is a suggested sequence of courses:

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
BU 121 Principles of Accounting I	3	BU 122 Principles of Accounting II	3
Math Elective**	3-4	Science Elective	3-4
Social Science Elective	3	Liberal Arts Elective	3
Business Elective	3	Business Elective	3
Physical Education	1	Physical Education	1
	<u>16-17</u>		<u>16-17</u>

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 171 Business Law I	3	BU 172 Business Law II	3
Economics Elective*	3	Computer Information Systems	3
Business Elective	3	Elective	3
Liberal Arts Elective	3	Business Elective	3
Liberal Arts Elective	3	Liberal Arts Elective	3
	<u>15</u>	Elective***	3
			<u>15</u>

Sixty-two hours are required to complete this program.

NOTE: Business and other electives should be chosen on the basis of the requirements of the four-year institution to which transfer is anticipated.

*EC 281 or EC 282 recommended.

**MA 154 Precalculus math level or higher.

***May need to be Liberal Arts for 30 credit total.

Computer Science [A.S.] Business Concentration APC-532

The two-year Computer Science (Business Concentration) Program is designed for students who plan to transfer and continue their studies in programs leading to the Bachelor's degree, or who plan to seek immediate employment. The program emphasizes a theoretical understanding of computers in combination with business oriented languages and applications.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
CS 110 Intro. to Computers	3	CS 113 Programming Assembler	3
CS 122 Programming RPG	3	CS 121 Programming COBOL	3
MA 157 A. Geom. Calc. I	4	MA 158 A. Geom. Calc. II	4
Science Elective*	<u>3-4</u>	Science Elective*	<u>3-4</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
CS Elective	3	CS 135 Systems Anal. & Design	3
CS 133 Advanced Prog. Techniques	3	MA 258 Diff. Equations	4
MA 257 A. Geom. Calc. III	4	MA 259 Linear Algebra	3
SS Elective	3	SS Elective	3
Physical Education	1	Physical Education	1
Elective**	<u>3</u>	Elective**	<u>3</u>
	17		17

BU 121, 122, 141
BU 152, 160
EL 232, 236
CS 120, 124, 130

Requirements are being revised; consult Advisement Office.

*PH 171, PH 172 recommended.

**Recommended electives include:

Computer Science [A.S.] Mathematics/Science Concentration APC-532

The two-year Computer Science (Mathematics/Science Concentration) Program is designed for students who wish to transfer and continue their studies in programs leading to the Bachelor's degree, or who wish to seek immediate employment. The program provides a theoretical understanding of computers, while emphasizing mathematical and scientific applications. Languages appropriate to those areas are also studied.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
SS Elective	3	SS Elective	3
CS 110 Intro. to Computers	3	CS 113 Programming Assembler	3
MA 157 A. Geom. Calc. I	4	MA 158 A. Geom. Calc. II	4
Science Elective*	<u>3-4</u>	Science Elective*	<u>3-4</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		CS Elective	3
CS 120 Programming FORTRAN	3	CS 121 Programming COBOL	3
CS Elective	3	MA 258 Diff. Equations	4
MA 257 A. Geom. Calc. III	4	MA 259 Linear Algebra	3
Physical Education	1	Physical Educaiton	1
**Electives	<u>6</u>	**Electives	<u>3</u>
	17		17

CS Electives: CS 122 CS 130
 CS 123 CS 133
 CS 124 CS 135

EL 232 Digital Electronics
 EL 236 Introduction to Microcomputers

Requirements are being revised; consult Advisement Office.

*PH 171, PH 172 recommended.

**Recommended electives include:

Mathematics and Science [A.S.]

APC-221

This program is designed for students who plan to transfer and continue their studies in programs leading to Bachelor's degree with particular emphasis on advanced study in the sciences and mathematics. Preparation for the professional fields of mathematics, the sciences, medicine and dentistry as well as teaching science and mathematics on the elementary and secondary levels can be initiated with this program.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshamn English II	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	<u>1</u>	Physical Education	<u>1</u>
	16-18		16-18

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Mathematics	3-4	Mathematics	3-4
Science	3-4	Science	3-4
Foreign Language or Elective	3	Foreign Language or Elective	3
Electives	<u>6</u>	Electives	<u>6</u>
	15-17		16-17

Students may concentrate in areas such as Biology, General Science, Geology, Mathematics, Pre-Med, or Physics. Sample concentrations are shown below:

Biology

BI 171, 172, 173
CH 173, CH 174
MA 157**, MA 158, MA 160

Physics

PH 171, 172, 271
ES 236
MA 157**, 158, 257, 258

Mathematics

MA 157**, 158, 257, 258, 259

Pre-Med

BI 171, 172, 173, 181, 182
CH 173, 174
MA 157**, 158
PH 171, 172

All students must complete 12 semester hours of humanities (EN 125, EN 126, and 6 semester hours of foreign language), 6 semester hours of social science, 4 mathematics courses, 4 science courses, and 2 semester hours of physical education, and additional electives to total 62 semester hours. At least 48 semester hours must be selected from the liberal arts and sciences.

*Social Science elective may be postponed until the second year.

**Prerequisite courses available.

Mathematics and Science [A.S.]

APC-221

Mathematics Concentration for Prospective Teachers

This concentration within the Mathematics and Science Program will give the student, planning to major in elementary education with a mathematics concentration or in early secondary mathematics education, the liberal arts and sciences background to transfer to a four-year college which offers a degree in education. Those preparing for secondary mathematics teaching should consider the mathematics concentration.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Foreign Language	3	Foreign Language	3
Mathematics*	3-4	Mathematics*	3-4
Science Elective	3-4	Science Elective	3-4
3 CS modules	<u>3</u>	CS 120 or CS 124	<u>3</u>
	15-17		15-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Mathematics*	3-4	Mathematics*	3-4
Science Elective	3-4	Science Elective	3-4
SS 291 Gen. Psychology	3	SS 297 Develop. Psychology	3
SS 281 Sociology	3	Elective	3
Foreign Language or Elective	3	Foreign Language or Elective	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-18		16-18

*Mathematics courses must be chosen from: MA 154, MA 160, MA 157, MA 158, MA 257, MA 258, MA 259.

Mathematics and Science [A.S.]

APC-221

Biology Concentration

This concentration within the Mathematics and Science program is recommended for students who plan to transfer and continue their studies in biology leading to a Bachelor's degree. Preparation for the professional fields of biological sciences, for a career in industry, research, government, or teaching can be initiated with this program.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Foreign Language	3	Foreign Language	3
MA 154 Precalculus	4	MA 160 Statistics	3
BI 171 Modern Biology	4	BI 172 Plant Biology	4
	<u>17</u>	Physical Education	<u>1</u>
			17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
MA 157 A. Geo. & Calc. I	4	MA 158 A. Geo. & Calc. II	4
CH 173 Chemistry I	4	CH 174 Chemistry II	4
Foreign Language or Elective	3	Foreign Language or	
Elective	3	BI 176 Ecology	3
Physical Education	1	BI 173 Animal Biology	<u>4</u>
	<u>15</u>		15

Mathematics and Science [A.S.]

APC-221

Pre-Med Concentration

This concentration within the Mathematics and Science program is recommended for students who plan to transfer and continue their studies in medicine and dentistry.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Foreign Language	3	Foreign Language	3
MA 154 Precalculus	4	MA 160 Statistics	3
BI 171 Modern Biology	4	BI 173 Animal Biology	4
Physical Education	1	Physical Education	1
	<u>18</u>		<u>17</u>

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
MA 157 A. Geo. & Calc. I	4	MA 158 A. Geo. & Calc. II	4
PH 171 Physics I	4	PH 172 Physics II	4
Foreign Language or Elective*	3-4	Foreign Language or Elective*	3-4
CH 173 Chemistry I	4	CH 174 Chemistry II	4
	<u>15-16</u>		<u>15-16</u>

*Suggested Electives: BI 181, BI 182, BI 282.

Mathematics and Science [A.S.]

APC-221

Physics Concentration

This concentration within the Mathematics and Science program is recommended for students who plan to transfer and continue their studies in Physics leading to a Bachelor's degree. Preparation for the professional field of physics for a career in industry, government, research, or teaching can be initiated with this program.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Foreign Language	3	Foreign Language	3
MA 157 A. Geo. & Calc. I	4	MA 158 A. Geo. & Calc. II	4
PH 171 Physics I	4	PH 172 Physics II	4
	<u>17</u>		<u>17</u>

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
MA 257 A. Geo. & Calc. III	4	MA 258 Differential Equations	4
PH 271 Physics III	4	ES 236 Mechanics: Dynamics or	
Foreign Language or Elective*	3	ES 281 Electric & Electric Circuits	3-4
CH 173 Chemistry I	4	Foreign Language or Elective**	3
Physical Education	1	CH 174 Chemistry II	4
	<u>16</u>	Physical Education	1
			<u>15-16</u>

*Suggested Elective: CS 120, CS 123, or CS 124.

**Suggested Elective: MA 259.

Mathematics and Science [A.S.]

APC-221

Mathematics Concentration

This concentration within the Mathematics and Science program is recommended for students who plan to transfer and continue their studies in Mathematics leading to a bachelor's degree. Preparation for the professional field of mathematics leading to a variety of careers in industry, government, research and teaching can be initiated with this program.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Foreign Language	3	Foreign Language	3
MA 157 A. Geo. & Calc. I*	4	MA 158 A. Geo. & Calc. II	4
Science	<u>3-4</u>	Science	<u>3-4</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
MA 257 A. Geo. & Calc. III	4	MA 258 Differential Equations	4
PH 171 Physics I	4	PH 172 Physics II	4
Foreign Language or Elective	3	Foreign Language or Elective	3
CS 120, CS 123 or CS 124	3	MA 259 Linear Algebra	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	15		15

*Prerequisite courses available.

Engineering Science [A.S.] APC-530

The Engineering Science Program closely parallels the first two years of the four-year college and university program in engineering. This fact enables graduates of the program to transfer, at the junior level, to such institutions and to specialize in any field of engineering. The strong emphasis placed on mathematics and physics also makes the Engineering Science Program the most appropriate course of study for those who wish to transfer and continue their studies in physics and applied mathematics.

Interest and motivation of the student are of paramount importance for succeeding in the program. A strong background in high school mathematics and physics is recommended for entrance to the program.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
PH 171 Physics I	4	PH 172 Physics II	4
MA 157 A. Geo. & Calc. I	4	MA 158 A. Geo. & Calc. II	4
CH 173 Chemistry I	4	CH 174 Chemistry II or Elective*	3-4
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Physical Education	<u>1</u>	CS 120 Computer Programming (FORTRAN)**	<u>3</u>
	16		17-18

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
ES 236 Mechanics: Statics	3	ES 236 Mechanics: Dynamics	3
PH 271 Physics III	4	ES 281 Electric & Electronic Circuits	4
MA 257 A. Geo. & Calc. III	4	MA 258 Differential Equations	4
Social Science Elective***	3	MA 259 Linear Algebra or Elective*	3-4
Physical Education	<u>1</u>	Social Science Elective***	3
	15	Physical Education	<u>1</u>
			17-18

Students are advised to select electives which are appropriate to the field of engineering in which they plan to major, and which meet the requirements of the college to which they plan to transfer.

Sixty-five semester hours are required to complete the program which must include 3 engineering science courses, 3 physics courses, 4 calculus courses, 1 computer programming course, 1 chemistry course, 2 English courses, 2 social science courses, 2 physical education courses, and at least two electives.

*If two electives are chosen, at least one must be from the following:

- MD 171 Engineering Graphics
- BI 171 Modern Biology
- BI 173 Animal Biology
- BI 181-182 Anatomy and Physiology

**May be postponed till the second year.

***May be taken during the first year.

Physical Education Concentration [A.S.] APC-220

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. This concentration should include the following:

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Science or Math Elective	3-4	Science or Math Elective	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	<u>1</u>	PE Elective 140 or 160 Series	<u>1</u>
	16-17		15-16

SECOND YEAR

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

Sixty-three semester hours are required for graduation, including two 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 should earn four (4) participation credits, as established with Physical Education faculty counseling.

Pre-Nursing Concentration [A.S.] APC-220

A PRE-NURSING TRANSFER PROGRAM is under development. For further information contact the Admissions Office.

Health Education Concentration [A.S.] APC-220

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. This concentration should include the following:

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Social Science Elective	3	Social Science Elective	3
Science or Math Elective	3-4	Science or Math Elective	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	<u>1</u>	PE Activity	<u>1</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
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	<u>3</u>	Elective	<u>3</u>
	16		16

Sixty-four semester hours are required for an Associate in Science degree, including 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 hours in science and/or mathematics.

BUSINESS

Accounting [A.A.S.] APC-630

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

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
BU 101 Principles of Business	3	SS Social Science Elective	3
BU 103 Mathematics of Business Finance	3	Mathematics Elective*	3-4
BU 121 Principles of Accounting I	3	BU 122 Principles of Accounting II	3
Elective*	3	EC 180 Intro. to Economics	3
	<u>15</u>	Physical Education	<u>1</u>
			16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 221 Intermediate Accounting I	3	BU 222 Intermediate Accounting II	3
BU 171-172 or 254 Law	3	BU 224 Cost Accounting	3
CS 100, 102, 103 (Micro Use)	3	Liberal Arts Elective	3
SC Science Elective	3-4	Electives*	<u>6</u>
Physical Education	1		15
Elective*	<u>3</u>		
	16-17		

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. Other suggested electives: BU 133, BU 134, BU 173, BU 225, CS 121, MA 154.

Business Administration [A.A.S.] APC-632

The Business Administration Program is designed to provide an exposure to various areas of business-related operations. It also allows for concentration as desired in Retailing, Mid-management, General Finance, or Basic Business. The course concentrations provide a foundation for middle management positions in the field of insurance, retailing, banking, civil service, finance, sales, and administrative management in various types of organizations.

The following is a suggested sequence of courses:

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 101 Principles of Business	3	EN 126 Freshman English II	3
BU 103 Math. of Bus. Finance	3	BU 122 Principles of Accounting II	3
BU 121 Principles of Accounting I	3	Social Science Elective	3
EN 125 Freshman English I	3	Mathematics Elective	3
Elective**	3-4	Elective	3
	15-16	Physical Education	1
			16

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Science Elective	3	Liberal Arts Elective	3
BU* Course Option	6	BU* Course Option	6
Elective**	3-4	Electives**	6
EC 180 Intro to Economics	3		15
Physical Education	1		
	16-17		

Students planning to transfer should select their liberal arts and sciences to meet the requirements of the four-year institutions which they plan to attend. Also see A.S. program.

*Business Administration majors should take four courses in one of the following areas of concentrations:

Retailing

BU 141 Marketing
BU 170 Advertising
BU 171, 172, or 254 Law
BU 243 Retail Management

Management

BU 151 Personnel Management
BU 152 Production Management
BU 171, 172, or 254 LAW
BU 261 Management Accounting
BU 179 Business Organizations

General Finance

BU 160 Introduction to Finance
BU 164 Credit Administration
BU 171, 172, or 254 Law
BU 262 Introduction to Investments
CS 110 Introduction to Computers

Recommended Electives

BU 133 BU 173
BU 134 BU 250
BU 165 CS 110

**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), plus physical education.

Business Data Processing [A.A.S.]

APC-636

(Computer Information Systems)

This curriculum is structured along the lines of career interests and job skills required by students who plan to enter the field of computer information systems.

The courses emphasize intensive practical problem solving skills, use of computers and business-oriented programming languages to solve business, government, and administrative problems, development of written and oral communication skills, and a core of business courses to achieve a well-rounded business and financial background.

Graduates will have sufficient knowledge to function as applications programmers, programmer/analysts, junior systems analysts and CIS management trainees.

The contents of this curriculum follow (and exceed) the guidelines for the CIS Programming Track suggested by the DPMA Education Foundation, October 1985.

Program prerequisite: H.S. Algebra, MA 147, concurrent Algebra enrollment, or permission of instructor.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
CS 110 Intro to Computers	3	CS 113 Programming Assembler	3
CS 122 Programming RPG	3	CS 121 Programming COBOL	3
BU 101 Principles of Business	3	BU 121 Principles of Accounting I.	3
Mathematics Elective	3-4	Liberal Arts Elective	3-4
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 122 Principles of Accounting II	3	CS Elective	3
CS 133 Advanced Programming Techniques	3	CS 135 Systems Anal. & Design	3
SC Science Elective	3-4	Social Science Elective	3
Liberal Arts Elective	3	Electives	<u>6</u>
Business Elective	<u>3</u>		15-16
	15-16		

Recommended Electives: BU 141, BU 152, BU 160, BU 173, BU 221, BU 224, EC 180, MA 157, CS 100, CS 101, CS 102, CS 103, CS 124.

A total of 62 semester hours are required to complete the program, made up of the following:

Computer Information Systems: 21 semester hours (including CS 110, CS 113, CS 121, CS 122, CS 133, CS 135).

Physical Education: 2 semester hours.

Liberal Arts: 20-21 semester hours (including EN 125, EN 126, 3-4 semester hours in Mathematics, 3-4 semester hours in Science, and 3 semester hours in Social Science).

Business: 12 semester hours (including BU 101, BU 121, BU 122).

General Electives: 7 semester hours.

Secretarial Science [A.A.S.] APC-625

The Secretarial Science Program provides the necessary foundation for positions as administrative assistants, secretaries, stenographers, and receptionists in traditional office and offices with word processing in business, government, and industry.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 133 Beginning Keyboarding or		BU 183 Intermediate Shorthand	4
BU 134 Intermediate Keyboarding*	3	BU 137 Business Communications	3
BU 131 Beginning Shorthand or		Social Science Elective	3
Electives	5	BU 239 Intro to Word Processing	3
EN 125 Freshman English I	3	Bu 134 Intermediate Keyboarding or	
Mathematics or Science**	3.4	BU 234 Advanced Keyboarding*	3
Physical Education	<u>1</u>		<u>16</u>
	15-16		

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 233 Advanced Shorthand	4	BU 236 Administrative Support	
BU 235 Administrative Support		Procedures II	3
Procedures I	3	Business Elective	3
Liberal Arts or Concentration***	3.4	Liberal Arts or Concentration***	3
Liberal Arts Elective	3	Liberal Arts Elective	<u>6-7</u>
BU 230 Machine Transcription	3		15-16
Physical Education	<u>1</u>		
	17-18		

A minimum of 20 semester hours of liberal arts and science courses in addition to 2 semester hours of physical education is required for graduation.

*Depending on preparation—completion of BU 234 required for graduation.

**A biological science course is recommended for those students planning to take the medical secretary concentration and who have not completed a high school biology course.

***Secretarial Science majors who wish to concentrate in one of the following areas, should take the courses identified below:

Medical Secretary
Medical-Related Elective
Medical-Related Elective
BU 233 Advanced Shorthand
(including Medical Module)

Legal Secretary
Business Law I, II or BU 254
BU 234 Advanced Typewriting
(including Legal Typing Module)

Word Processing Specialist Concentration [A.A.S.] APC-625

The Word Processing Specialist Concentration Program provides the necessary foundation for positions in offices with word processing in business, government, and industry. Program prerequisite: BU 133 Beginning Keyboarding or equivalent. The following is a suggested sequence of courses.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 134 Intermediate Keyboarding*	3	BU 234 Advanced Keyboarding or	
BU 239 Introduction to Word		Elective*	3
Processing	3	English Elective	3
EN 125 Freshman English I	3	GA 104 Typography	3
GA 101 Graphic Arts I**	3	BU 230 Machine Transcription	3
Liberal Arts Elective	3	BU 240 Word Processing	
Physical Education	<u>1</u>	Applications	3
	16	Physical Education	<u>1</u>
			16

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
BU 235 Adm. Support Procedures I	3	BU 236 Adm. Support Procedures II	3
Social Science Elective	3	CS 110 Intro. to Computers	3
BU 179 Business Organizations	3	BU 259 Word Processing	
HD 221 Human Relations &		Management	3
Group Dynamics	3	Mathematics or Science	3-4
Elective	<u>3</u>	Liberal Arts Elective	<u>3</u>
	15		15-16

A minimum of 20 semester hours of Liberal Arts and Science courses in addition to 2 semester hours of Physical Education is required for graduation.

Suggested Electives:

AR 150 Basic Design	EN 257 Creative Writing
BU 103 Math of Business Finance	GA 103 Graphic Arts II
BU 137 Business Communications	GA 107 Production Management
BU 151 Personnel Management	HD 100 Studies of the Person
BU 250 Management Decision Making	HU 254 Logic and Argument
EN 127 Technical English	SS 291 General Psychology
EN 132 Speech	EC 183 Consumer Economics
Spanish or other foreign language	BU 131 Shorthand
	BU 249 Info/WP Practicum

*A student must have completed BU 133 or equivalent. A student must be typing at least 35 net words a minute at the end of BU 134.

**Laboratories meet at the Vo-Tech Center. Students make own transportation arrangements.

TECHNOLOGIES

Automotive Technology [A.A.S.]

APC-525

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. Students in this program are expected to provide their own safety footwear, limited hand tools, and other personal items appropriate for automotive laboratory classes.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
AT 121 Introduction to Automotive Function**	3	AT 123 Internal Combustion Engine Support Systems**	3
AT 122 Theory of Internal Combustion Engines**	3	Mathematics or Elective*	3-4
Mathematics*	3-4	SC 162 Introduction to Physics II	3
SC 161 Introduction to Physics I	3	EN 125 Freshman English I	3
AT 124 Automotive Electrical Systems	3	Social Science Elective	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
AT 225 Automotive Chassis Systems**	3	AT 227 Electronic Engine & Chassis Analysis**	3
EN 126 Freshman English II or EN 127 Technical English	3	AT 228 Consumer Relations & Services	3
Electives	6	AT 226 Power Trains—Design Features & Analysis	3
Social Science Elective	<u>3</u>	Electives	<u>6</u>
	15		15

*Math placement depending upon preparation, competence at level of MA 142 or higher required.

Suggested Electives: BU 101, BU 103, EL 125, HD 150, MA 144, MD 171.

Minimum of 62 semester hours required for graduation, including two hours of physical education.

**Course meets at the Voc-Tech Center. Students make own transportation arrangements.

Construction Technology [A.A.S.]

APC-540

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 construction field. Students in this program are expected to provide their own safety footwear, limited hand tools and personal items appropriate for construction technology laboratory classes.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
CT 121 Introduction to Building Trades and Construction Materials**	3	CT 123 Light Frame Construction II**	3
CT 122 Light Frame Construction I**	3	CT 124 Blueprint Reading	3
SC 161 Introduction to Physics	3	Elective	3
EN 125 Freshman English I	3	EN 126 Freshman English II or	3
Mathematics*	3-4	EN 127 Technical English	3
Physical Education	1	Mathematics or Elective*	3
		Physical Education	1
			<u>16-17</u>
	16-17		

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
CT 225 Masonry, Concrete and Steel Construction**	3	CT 228 Estimating	3
CT 226 Plumbing & Climate Control**	3	CT 229 Electrical Wiring	3
Elective	3	CR 230 Principles of Soils**	1
MD 171 Engineering Graphics	3	Social Science Elective	3
Social Science Elective	3	SU 101 Surveying I	3
		MD 180 Architectural Drafting	3
			<u>16</u>
	15		

An Alternate Energy Concentration may be elected by construction technology majors. A proficiency in at least 9th grade Algebra is required to elect this concentration.

The following electives should be taken: Alternate Energy I, Alternate Energy II, Introduction to Physics II, Technical Mathematics II.

Minimum of 63 semester hours required for graduation, including two hours of physical education.

Suggested Electives: BU 101, BU 103, BU 121, BU 171, HD 150, MA 144, MA 151, EL 125, CT 131, CT 132.

*Math placement depending upon preparation, competence at level of MA 142 or higher required.

**Course meets at sites other than main campus. Students make own transportation arrangements.

Criminal Justice [A.A.S.]

APC-640

This program is designed to prepare students for careers with federal, state, county and local law enforcement organizations. The courses are concerned with fulfilling the educational needs of students, both male and female, aiding them in becoming efficient and knowledgeable criminal justice personnel. The program is open, as well, to those who are currently employed in law enforcement.

STUDENTS PLEASE NOTE: Many criminal justice agencies require applicants to meet qualifying entrance requirements. Students pursuing careers in these agencies should be aware of conditions that may disqualify applicants for employment, based on health, physical conditions, or character.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
CJ 106 Introduction to Criminal Justice	3	CJ 104 Criminal Law II	3
Elective or Science (SC 130 suggested)	3-4	CJ 105 Fundamentals of Criminal Investigation	3
SS 281 Introduction to Sociology	3	Mathematics (MA 160 suggested)	3-4
CJ 103 Criminal Law I	3	SS 291 General Psychology	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-17		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
CJ 112 Introduction to Police Organization & Management	3	HU 258 Ethics or Liberal Arts Elective	3
CS 110 Introduction to Computers	3	CJ 107 Police Community Relations	3
EN 132 Speech	3	CJ 111 Introduction to Public Administration	3
CJ 109 Criminology	3	Social Science Elective	3
Elective or Science (SC 130 suggested)	<u>3-4</u>	Elective	<u>3</u>
	15-16		15

Recommended Electives: CJ 108, CJ 113, CJ 118, CJ 121.

Minimum of 62 semester hours required for graduation, including two hours of physical education and a minimum of 3 hours of science.

Electrical Technology [A.A.S.] (Electronics Technology) APC-555

This program is designed for those students who plan to seek employment after two years at Fulton-Montgomery Community College as engineering technicians, electrical draftsmen, lab assistants and service technicians. The program also prepares students for transfer into Bachelor of Technology programs. An interest in electricity and electronics and a degree of manual dexterity are assets. Students in this program may be required to provide their own electronic calculators and small hand tools.

Prerequisite: High school algebra. Trigonometry and physics are desirable. If a student's math-science level of competence does not equal or exceed the prerequisite, that student should consider a pre-technology course of study.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II or	
EL 125 Electricity I	4	EN 127 Technical English	3
MA 161 Mathematics for Electrical Technology or		EL 126 Electricity II	4
MA 157 Calculus	4	EL 127 Instrumentation	2
SC 161 Introduction to Physics or		MA 162 Mathematics for Electrical Technology or	
PH 171 Physics	3-4	MA 158 Calculus	4
Physical Education	<u>1</u>	SC 162 Introduction to Physics	3-4
	15-16	Physical Education	<u>1</u>
			17-18

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EL 229 Electronics I	5	EL 230 Electronics II	5
EL 231 Electrical Machines	3	EL 235 Industrial Electronics and Robotics	3
EL 232 Digital Electronics	3	EL 236 Intro. to Microcomputers	4
MD 176 Electrical Graphics	2	Social Science Elective	<u>3</u>
Social Science Elective	<u>3</u>		15
	16		

Students planning to transfer should see an advisor for appropriate course selection. The following courses are recommended by most four-year institutions for students in Electrical Technology: MA 157, MA 158, PH 171, PH 172, and Computer Programming as available.

Minimum of 63 hours required for graduation including 2 hours of physical education.

Food Service Administration [A.A.S.]

APC-570

The Food Service Administration curriculum is designed to develop technical competence and prepare students for supervisory trainee positions in the food processing, restaurant and related industries. It also allows for concentration in Institutional Foods, Restaurant Management, or Food and Science. Students in the program are expected to provide their own white uniforms and other appropriate items for use in food service laboratory classes. Uniform specifications will be provided by the instructor.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
FS 121 Intro. to Food Service & Sanitation	3	FS 123 Food Purchasing**	3
FS 122 Food Preparation I**	3	FS 124 Food Preparation II**	3
HE 121 Nutrition	3	HE 125 Advanced Nutrition	3
EN 125 Freshman English I	3	EN 126 Freshman English II or	
SC 141 Intro. to Biology I, BI 171, or BI 181	3-4	ENG 127 Technical English	3
Physical Education	1	BU 103 Math of Business Finance	3
		Physical Education	1
			<u>16</u>
	16-17		

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
FS 224 Hospitality Management**	3	FS 227 Food Service Organization & Management**	3
FS 225 Food & Beverage Cost Control**	3	FS 228 Food Service Seminar*	3
Social Science Elective	3	Concentration Elective*	3
Concentration Electives*	6	Social Science Elective	3
	<u>15</u>	FS 130 Quality Food Internship	3
			<u>15</u>

Minimum of 62 semester hours required for graduation, including two hours of physical education, plus 20 semester hours of Liberal Arts.

*Food Service Majors should take courses in one of the following areas of concentration:

Institutional Foods

FS 226 Baking & Pastry
 FS 126 Diet Therapy
 HD 221 Human Relations & Group Dynamics or FS Elective

Restaurant Management

BU 121 Accounting I
 BU Elective
 HD 221 Human Relations & Group Dynamics or Business Elective

Food & Service Studies

SC/BI/CH Elective
 SC 170 Intro. Chemistry or CH 173
 MA/SC Elective

Recommended Electives

BU 101, BU 122, BU 171, BU 153,
 BU 140, BU 137
 FS 126, FS 130, FS 226
 MA 150, MA 160
 SC 131, SC 172, BI 181, BI 182

**Course may meet at site other than main campus. Students make own transportation arrangements. Students are required to purchase and maintain supportive utensils and clothing.

Leather Technology [A.A.S.]

APC-454

This program is designed to prepare students for careers in the leather industry. The courses are concerned with fulfilling the educational needs of students, aiding them in becoming efficient, knowledgeable, and skilled leather personnel.

The program is offered evenings to serve those who are currently employed in the local leather industry.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	English Elective (EN 126, 127, or 132)	3
Math Elective	3-4	Math/Science Elective	3-4
Chemistry	3-4	Liberal Arts Elective	3
BU 101 Principles of Business	3	Business Elective	3
LT 101 Intro. to Leather Technology I	3	LT 102 Intro. to Leather Technology II	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	16-18		16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
LT 221 Principles of Leather Technology (Pre-tanning)	3	Social Science Elective	3
LT 222 Leather Tanning and Coloring	3	LT 223 Leather Finishing	3
Leather Technology Elective	3	Leather Technology Elective	3
Business Elective	3	Business Elective	3
Elective	<u>3</u>	Elective	<u>3</u>
	15		15

Suggested Electives: Biology, BI 282, Chemistry, BU 121, BU 122, BU 151, BU 153, BU 224, EC 180, CS 110, CS 123, NR 126, LT 130, LT 224, or LT 230.

Minimum of 62 semester hours required, including two hours of Physical Education and a minimum of 20 semester hours in Liberal Arts and Science.

Natural Resources Conservation [A.A.S.]

APC-617

The Natural Resources Conservation curriculum is designed to provide students with the educational background required to actively seek employment from government and private agencies in the areas of lands, parks and wildlife management. The Program has developed a close working relationship with the NYS Department of Environmental conservation and additional work experience-related independent study credits are available during summers, winter intersession and fall and spring semesters. The program can also provide the flexibility to allow students to transfer to baccalaureate degree programs in conservation.

The SUNY College of Environmental Science and Forestry, and the SUNY College at Plattsburg provide upper division transfer programs in Environmental and Resource Management. In addition, Haywood Technical College (Clyde, North Carolina) provides the following certificate programs: Sawyer, Saw Filer, and Lumber Specialist. Students planning to transfer to these institutions must consult with their Instructor or see a Counselor before they begin their study at Fulton-Montgomery Community College.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
NR 121 Fisheries and Wildlife Management I**	3	NR 122 Fisheries and Wildlife Management II**	3
Social Science Elective	3	BI 173 Animal Biology	4
EN 125 Freshman English I	3	EN 126 Freshman English II or	3
Mathematics or Elective*	3-4	EN 127 Technical English	3
Sc 141 Introductory Biology I or		Mathematics	4
BI 171 Modern Biology	3-4	BI 176 Biology	3
Physical Education	1	Physical Education	1
	<u>16-18</u>		<u>18</u>

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
NR 223 Forest Management I**	3	NR 224 Forest Management II**	3
SC 143 Earth Systems	3	NR 231 Conservation and Outdoor Recreation Skills	4
SU 101 Surveying	3	BI 172 Plant Biology	4
SC 170 Intro. Chemistry	3	NR 126 Principles of Soil and Water**	3
Mathematics	3	Social Science Elective	3
	<u>15</u>		<u>16</u>

Suggested electives: PE 231, HE 136, CS 110, CS 123, CJ 103, CJ 104, CJ 105, CJ 106. Minimum of 64 semester hours are required for graduation, including two hours of physical education.

*Math placement depending upon preparation, must include MA 142 or higher (statistics recommended).

**Course meets at sites other than main campus. Students make own transportation arrangements. Overnight and weekend trips may be required in NR courses.

Nursing [A.A.S.] APC-622

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 or equivalent, medical examination. Algebra and chemistry are recommended. Students are required to carry their own liability insurance.

Because of the large number of applications to the Nursing Program, it is recommended that applications for admission be on file by December 1. The final date for receipt of applications is listed in the College calendar.

FIRST YEAR

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

SECOND YEAR

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

Minimum of 64 semester hours required for graduation, including two hours of physical education.

**To qualify for the next sequential nursing course, the student must earn a grade of C or higher in nursing and pass the clinical laboratory. Students are expected to provide uniforms to wear in laboratory periods. Some courses meet at sites other than main campus. Students make their own transportation arrangements. Students will be responsible for all fees for nursing tests taken in their second year.

Textile Technology [A.A.S.]

APC-663

This program is designed to prepare students for careers in the Textile industry; The courses are concerned with fulfilling the educational needs of students, aiding them in becoming efficient, knowledgeable, and skilled textile personnel.

The program is offered evenings to serve those who are currently employed in the local textile industry.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	English Elective	
Math Elective	3-4	(EN 126, 127, or 132)	3
Chemistry Elective	3-4	Math/Science Elective	3-4
EC 180 Intro to Economics	3	Social Science Elective	3
TT 101 Intro to Textile Technology I	3	Business Elective	3
Physical Education	<u>1</u>	TT 102 Intro to Textile Technology II	3
	16-18	Physical Education	<u>1</u>
			16-17

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
TT 201 Textile Technology	3	Liberal Arts Elective	3
TT 202 Textile Dyeing	3	TT 203 Advanced Textile Dyeing	3
TT 204 Textile Finishing	3	TT 205 Advanced Textile Finishing	3
Business Elective	3	Business Elective	3
Elective	<u>3</u>	Elective	<u>3</u>
	15		15

Minimum of 62 semester hours required for graduation, including two hours of Physical Education and a minimum of twenty semester hours in Liberal Arts and Science.

Visual Communications Technology

[A.A.S.]

Graphic Arts

APC-677

The Visual Communications Technology curriculum is designed to prepare technicians to seek employment in the graphic areas of the visual communications industry. Emphasis will be directed in the areas of layout and design, photo composition, paste-up and copy preparation, reproduction camera work, stripping, offset plate-making, press work, finishing and related areas. Special emphasis is on the development of contemporary job skills in areas such as offset lithography and photography. Technical knowledge of science oriented areas, such as chemistry, physics and mathematics are developed. A balance of practical application and theory will enable the individual to seek supervisory and technician positions in printing and publishing of newspapers, magazines, books and the advertising field; including specialty and general printing for commercial, job shop and in-plant printing units. The program is also designed to provide some flexibility for transfer to schools offering baccalaureate degrees in graphic communications.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
GA 101 Graphics Arts I**	3	GA 103 Graphic Arts II**	3
ER 101 Principles of Photography	3	GA 104 Typography	3
EN 125 Freshman English I	3	EN 126 Freshman English II or	
BU 133 Beginning Keyboarding or		EN 127 Technical English	3
BU 123 Personal Keyboarding**	2-3	Mathematics*	3-4
AR 150 Basic Design	3	Elective	3
Physical Education	1	Physical Education	1
	<u>15-16</u>		<u>16-17</u>

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
GA 105 Layout & Printing Design	3	GA 107 Production Management**	3
GA 106 Graphics Arts Production**	3	ER 102 Advanced Photography	3
SC 170 Intro. Chemistry	3	Elective	3
Elective	3-4	SC 162 Physics	3
Social Science Elective	3	Social Science Elective	3
	<u>15-16</u>		<u>15</u>

Suggested electives: BU 170, CS 110, CS 100-101, CS 121, GA 108, ER 150, ER 151, AR 200.

Minimum of 62 semester hours required for graduation, including 2 hours of physical education.

*Mathematics placement dependent upon preparation, competence at level of MA 142 or higher required.

**Laboratories meet at Voc-Tech Center. Students make own transportation arrangements.

***AVT Lessons for V.C. majors included.

INDIVIDUAL STUDIES PROGRAMS [A.O.S.] Associate in Occupational Studies

The Individual Studies Programs can be of three types:

- one-semester program (12 - 18 credits)
- one-year certificate program (24 - 36 credits) APC-987
- Two-year degree (A.O.S.) program (60 - 62 credits) APC-688

These programs will be designed to provide specialized study for students with clearly identified career goals or special educational needs *which cannot be met by existing programs*. Specific programs will be developed individually by the student and three faculty members.

Programs of study will include regular courses, independent and directed study, field work, prior educational experience, and prior work experience. Distribution of credits in these areas will follow existing college policy. In addition, at least half of the credits must be directly related to the students *career goal* or special educational needs.

Procedures to be followed in the development of these programs are as follows: consultation with three faculty mentors to review the student's academic background and *career* and educational goals, development of a detailed proposal in which the program of study and its relationship to the student's *career goals* or special educational needs are described, approval by mentors, and approval by the Associate Dean for Career Education or Associate Dean for Liberal Arts and Sciences.

The purpose of these programs is to provide greater curriculum flexibility, breadth, and depth in response to individual student *career objectives* or special educational needs *which cannot be met by existing programs*, to provide opportunity for students to explore fields at the College before making a more definite educational choice, to provide greater advanced placement opportunity, and to provide for an articulated series of programs which encourage individuals to return to college for updating or retraining (one-semester programs) as well as for additional specialization provided by the one-year certificate and two-year degree programs.

For further information contact the Admissions Office.

Individual Studies Certificate

Collaborative Career Learning Program

APC-987

In this innovative program, students learn career skills in fields in which jobs are available locally. Although similar to cooperative education and internship programs, the COCAL program requires that students learn basic career skills at job sites without pay. Students learn from practicing professionals who follow competency guidelines prescribed by the College and based on Dictionary of Occupational Titles specifications, National competency catalogs, and employer input. Students combine collaborative career learning with 12-18 credits of related college coursework to earn a one-year certificate in Individual Studies.

Students include displaced homemakers, young high school graduates interested in "hands-on" learning and immediate employment, as well as students interested in career exploration prior to committing themselves to four years of college. The primary goal of the program is employment upon graduation. Enrollment is competitive.

<i>First Semester</i>		<i>Second Semester</i>	
CL 191 Collaborative Career Learning	8	CL 199 Professional Career Prep.	1
Related Electives*	<u>6-9</u>	CL 192 Collaborative Career Learning	8
	14-17	Related Electives*	<u>6-9</u>
			15-18

Career fields available each year based on local employment opportunities. Examples of these are:

- Automotive Marketing Assistant
- Attorney's Assitant (Specialized)
- Bank Teller/Supervisor
- Business Machine Repairer
- Color Photography Technician
- Dental Assitant
- Electronic Graphic Artist
- Hotel/Motel Management Assistant
- Industrial Maintenance Mechanic
- Insurance Office Assistant
- Intake/Mediation Coordinator
- Newswriting/Editing
- Optometric Office Assistant
- Quality Control Specialist
- Radio Announcing/Reporting
- Retail Merchandising Assistant
- Travel Agent Assistant
- Water/Wastewater Treatment Plant Assistant

Specific career study programs change from semester to semester. Check with the Office of the Associate Dean/COCAL for current listings.

*Courses to be selected from college course offerings with the approval of COCAL program supervisor.

Individual Studies [A.O.S.] Professional Pilot Concentration APC-688

The two-year program in Air Science is a special individualized program leading to an Associate in Occupational Studies Degree. It is designed to combine general education, air science ground school, elective, and off-campus flight experience at FAA 141 approved schools and building a unique degree to meet individual needs and goals.

Four levels of training are included: Private Pilot, Instrument Rating, Commercial, and Flight Instructor.

Graduates may be employed as pilots or instructors. Industry, the military, private corporations, airlines, and government agencies have a need for highly skilled college trained pilots.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
AV 101 Air Science I	3	AV 102 Air Science II	3
Mathematics	3-4	EN 126 Freshman English II or	
SC 161 Intro. to Physics or		EN 127 Technical English	3
PH 171 General Physics	3-4	Social Science Elective	3
EN 125 Freshman English I	3	Elective	3
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	13-15		13

(SUMMER FLYING EXPERIENCE WILL BE REQUIRED)

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
AV 201 Air Science III	3	AV 202 Air Science IV	3
Social Science Elective	3	Humanities Elective	3
Electives	<u>11</u>	Electives	<u>11</u>
	17		17

Minimum of 60 semester hours required for graduation, including two hours of Physical Education (30 Semester hours must be earned at FMCC) AND successful flight experience (FAA certification through flight instructor rating). FAA required written examinations are available through the college.

NOTE: The cost of flight experience (off campus) is not included in the estimated costs listed in this catalog. Flight costs are established by the flight school involved and are paid directly to the flight school. The College does not provide flight experience. A list of FAA 141 approved flight schools is available upon request.

ONE-PLUS-ONE DEGREE PROGRAMS

In cooperation with the State University Agricultural and Technical Colleges at Canton and at Cobleskill, and with the College of Environmental Science and Forestry, Fulton-Montgomery Community College offers "one-plus-one" programs in the following areas:

with Canton:

Industrial Technology
Mortuary Science
Science Laboratory Technology
(Biology Concentration)
(Chemistry Concentration)
(Milk & Food Quality Control)

with Cobleskill:

Biological Technology
Chemical Technology
Floriculture
Public Health Technology
(Environmental Health)
Medical Laboratory Technology
Histotechnology

*with College of Environmental
Science & Forestry:*

Forest Technology

A student in a one-plus-one program spends the first year at Fulton-Montgomery taking courses prescribed for the program. Upon successful completion of this first year (minimum of 1.75 average), the student is guaranteed transfer into the program at Canton, Cobleskill or Forestry for the final year of the program and the award of the Associate degree. A second application is necessary during the first year (except Forestry Technology which requires admission by ES & F before starting at FMCC). The office of career planning assists students with the transfer process.

Science Laboratory Technology [A.A.S.] Milk & Food Quality Control Concentration APC-584

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II or	
BI 171 Modern Biology or		EN 127 Technical English	3
SC 141 Introduction to Bio. I	3-4	BI 282 Microbiology	4
CH 173 Fundamentals of Chem. I	4	CH 174 Fundamentals of Chem II	3
Social Science Elective	3	Social Science Elective	3
Mathematics	<u>3-4</u>	Physical Education	<u>1</u>
	16-18		15

SECOND YEAR—CANTON AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
10301 Dairy & Food Sci. I	3	10302 Dairy & Food Sci. II	3
10220 Careers	1	10303 Food Prod. Eval.	2
10201 Prin. of Env. Health	3	10306 Elem. of Food Sanitation	4
10210 Dairy & Food Micro.	4	10305 Water Supplies &	
10304 State Lic. for Milk	3	Sewage Treatment	3
10212 Field Bio. & Ecol. or		10211 Envir. Microbiology	3
10109 An. Science or		10307 Dairy Lab Instrumentation	<u>2</u>
10213 Freshwater Bio.	<u>3-4</u>		17
	17-18		

GRADUATION REQUIREMENTS: Total Semester Credit Hours: 64.

Industrial Technology [A.A.S.]

APC-583

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II, or	
PH 171 Physics I	4	EN 127 Technical English	3
EL 125 Electricity	4	PH 172 Physics II	4
MA 151 Inter. Algebra or MA 142	4	EL 126 Electricity	4
MD 171 Engineering Graphics	3	MA 154 Mathematics or MA 151	4
Physical Education	<u>1</u>	Physical Education	<u>1</u>
	19		16

SECOND YEAR—CANTON AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
30310 Strength of Materials	4	30421 Electronics	4
40614 Basic Calculus	4	30621 Fluid Power Systems	4
Technical Electives*	<u>8</u>	Social Science	3
	16	Technical Electives*	<u>5-6</u>
			16-17

*Technical Electives

- 30604 Manufacturing Processes I
- 30202 Automotive Welding
- 30303 Elementary Surveying
- 30304 Construction I
- 30624 Shop Practice
- 30605 Engineering Drawing II
- 30607 Manufacturing Processes II
- 30307 Construction Drafting
- 30306 Hydraulics
- 30117 Introduction to Alternate Energy
- 30108 Plumbing Design
- 30314 Project Management
- 30614 Work Simplification & Measurement
- 30118 Active & Passive Energy Systems I
- 30619 Quality Control
- 30620 Production Planning
- 30119 Active & Passive Energy Systems II
- 30002 Computer Applications

GRADUATION REQUIREMENTS: Total semester hours — 64.

Mortuary Science [A.A.S.]

APC-599

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 132 Speech	3
BU 101 Prin. of Business	3	BI 182 Anat. & Phys.	4
BU 171 Business Law	3	BU 121 Accounting I	3
Social Science Elective	3	BU 165 Small Bus. Mgt.	3
BI 181 Anat. & Phys.	4	Social Science Elective	3
	<u>16</u>	Physical Education	<u>1</u>
			17

SECOND YEAR—CANTON AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
10501 Intro. to Fun. Service	3	10504 Clin. Theory, Pract. & San. II	4
10502 Funeral Service	3	10506 Senior Seminar	3
10503 Clin. Theory, Pract. & San. I	4	10508 Restorative Art	4
10219 Pathology	3	10509 Mort. Hyg. & San. Sci.	3
41001 Sociology	3	Social Science Elective	3
	<u>16</u>		<u>17</u>

<i>Summer</i>	
10507 Clinical Practicum	2

GRADUATION REQUIREMENTS: Total Semester Credit Hours — 65.

Science Laboratory Technology [A.A.S.] Biology Concentration APC-584

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
BI 171 Modern Biology	4	BI 172 Plant Biology	4
CH 173 Fund. Chemistry I	4	CH 174 Fund. Chemistry II	4
Mathematics Elective	4	BI 282 Microbiology	4
Physical Education	1	Social Science Elective	3
	<u>16</u>		<u>18</u>

SECOND YEAR—CANTON AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
10220 Careers	1	Electives (4-5)	3
Social Science	3	40111 Biochemistry	3
Electives (4)		10223 Microtechniques	3
40109 Quantitative Analysis (Strongly rec.)	4	40110 Instru. Analysis	3
10212 Field Bio. & Ecol.	3	10107 Land Mngt. & Conservation	3
10201 Princ. of Env. Health	3	10211 Env. Microbiology	3
10210 Dairy & Food Micro.	4	10711 Research An. Handling Skills	1
10101 Soil Science	3	10305 Water Supplies & Sewage Treatment	3
10301 Dairy & Food Sci. I	3	10207 Human Anat. & Phys.	4
10213 Freshwater Biology	4	40615 Statistics	3
	<u>16</u>	10412 Medical Microbiology	3
		10402 Hematology	2
			<u>16</u>

GRADUATION REQUIREMENTS: Total Semester Credit Hours — 64.

Biological Technology [A.A.S]

APC-614

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 127 Technical English or	
CH 173 Fund. Chemistry I	4	EN 126 Freshman English II	3
BI 171 Modern Biology	4	CH 174 Fund. Chemistry II	4
Mathematics (MA 154 suggested)	3-4	BI 173 Animal Biology	4
Physical Education	1	Mathematics (MA 160 suggested)	3-4
	<u>15-16</u>	SS Elective	3
			<u>17-18</u>

SECOND YEAR—COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
BI 119 Microbiology	4	BI 260 (3) or CH 224 (4)	3-4
MA 105 Comp. & Graph.	2	SS Elective	3
Specialization Elec.	6	Physical Education	1
Electives	5	BI 118 Human Physiology	3
	<u>17</u>	Specialization Elective	3
		Elective	4
			<u>17-18</u>

GRADUATION REQUIREMENTS: a minimum of 66 semester hours with 33 semester hours to have been completed on the Cobleskill campus.

SPECIALIZATION ELECTIVES: courses with BI, CH, EH, MA, or PH numbers offered on the Cobleskill campus other than BI 111-112, CH 111-112 or CH 121-122, BI 118, BI 119, BI 260, CH 224, or MA 105 or their equivalents at FMCC. Students must take a minimum of 8 semester hours of specialization electives (9 s.h. will be required of students who take BI 260).

Chemical Technology [A.A.S.]

APC-535

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 127 Technical English or	3
CH 173 Fund. Chemistry I	4	EN 126 Freshman English II	4
Mathematics*	3-4	CH 174 Fund. Chemistry II	3-4
Social Science Elective	3	Mathematics*	3
Elective	2-3	Social Science Elective	3
Physical Education	<u>1</u>	Elective	3
	16-18	Physical Education	<u>1</u>
			17-18

SECOND YEAR—COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
CH 231 Organic Chemistry I	4	CH 232 Organic Chemistry	4
CH 221 Quantitative Analysis	3	CH 224 Instr. Analysis	3
MA 105 Comp. and Graph. Tech.	2	Specialized Science Electives**	5-6
Specialized Science Electives**	<u>6-7</u>	Electives	<u>5</u>
	15-16		17-18

GRADUATION REQUIREMENTS: Total semester hours—66, with 33 hours completed at Cobleskill.

*Mathematics placement dependent upon preparation, competence in intermediate algebra required.

**Courses chosen from biology, chemistry, physics, math, data processing, or physical science.

Floriculture [A.A.S]

APC-643

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 127 Technical English or	
Social Science Elective	3	EN 126 Freshman English II	3
BI 171 Modern Biology	4	Social Science Elective	3
Electives	6	BI 172 Plant Biology	4
Physical Education	<u>1</u>	Electives	6
	17	Physical Education	<u>1</u>
			17

SECOND YEAR—COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
OH 111 Floral Design I	3	OH 172 Flower Shop Management	3
OH 131 Floriculture	3	OH 186 Entomology	3
OH 113 Plant Science Laboratory		OH 114 Plant Science Laboratory	
Techniques	1	Techniques	1
OH 141 Nursery Management I	3	OH 212 Floral Design II	3
OH 181 Plant Pathology	3	OH 200-210 Plant Science	
OH 200-210 Plant Science		Occupational Experiences I	1
Occupational Experiences I	1	OH 232 Floriculture II	3
OH 251 Greenhouse Management	<u>3</u>	AG 111 Introduction to Soil Science	<u>3</u>
	17		17

GRADUATION REQUIREMENTS: Total Semester hours—68.

Public Health Technology [A.A.S.] Environmental Health Concentration APC-624

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 127 Technical English or	
CH 173 Fund. Chemistry I	4	EN 126 Freshman English II	3
BI 171 Modern Biology	4	CH 174 Fund. Chemistry II	4
Mathematics*	3-4	BI 173 Animal Biology	4
Physical Education	<u>1</u>	BI 282 Microbiology	4
	15-16	Mathematics*	<u>3-4</u>
			18-19

SECOND YEAR—COBLESKILL AGRICULTURAL AND TECHNICAL COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EH 102 Environmental Health II	2	EH 101 Environmental Health I	2
EH 207 Milk and Food Sanitation	3	Social Science Elective	3
PH 111 Physics I	4	Specialization Elective	5
Specialization Elective	3	Electives	5-7
MA 105 Fund. and Graph.	2	Physical Education	<u>1</u>
Social Science Elective	<u>3</u>		16-18
	17		

GRADUATION REQUIREMENTS: Total semester hours—66, with 33 hours completed at Cobleskill.

*Mathematics placement dependent upon preparation, competence at level of MA 154 or higher required.

Medical Laboratory Technology [A.A.S.] Histotechnology Concentration APC-600

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 127 Technical English or	
CH 173 Fund. Chemistry I	4	EN 126 Freshman English II	3
BI 171 Modern Biology	4	CH 174 Fund. Chemistry II	4
Mathematics Elective*	3-4	BI 173 Animal Biology	4
Physical Education	<u>1</u>	Mathematics Elective	3-4
	15-16	Electives**	3
		Physical Education	<u>1</u>
			18-19

SECOND YEAR—S.U.N.Y. COBLESKILL

<i>First Semester</i>		<i>Second Semester</i>	
BI 251 Histology	3	BY 118 Human Physiology	3
BY 291 Anatomy	3	BY 258 Microtechniques	3
MA 105 Comp. & Graph.	2	BY 255 Animal Pathology	2
Social Science Elective	3	Social Science Elective	3
BI 113 Med. Orient.	1	Electives	<u>5</u>
Electives	<u>5</u>		16
	17		

SUMMER: BI 275 Clinical Experience in Histology (4) required for certification by American Society of Clinical Pathology.

GRADUATION REQUIREMENTS: Total semester hours—66, with 33 completed at Cobleskill.

*Mathematics placement dependent upon preparation, competence at level of MA 154 or higher required.

**May be Microbiology.

Forest Technology [A.A.S.]

APC-620

FIRST YEAR—FULTON-MONTGOMERY COMMUNITY COLLEGE

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
BI 171 Modern Biology or		BI 172 Plant Biology or	
SC 141 Intro. Biology I	3-4	BI 173 Animal Biology or	
Mathematics*	3-4	SC 142 Intro. Biology II	3-4
EC 180 Intro. to Economics	3	Mathematics*	3-4
Elective	<u>3</u>	Electives	<u>6</u>
	15-17		15-17

SECOND YEAR—RANGER SCHOOL, WANAKENA CAMPUS

Courses in area of specialization.

NOTE: Concurrent application to Fulton-Montgomery and to the College of Environmental Science and Forestry is required. Decisions on admission to the Forest Technology program are rendered by the College of Environmental Science and Forestry.

*Mathematics placement dependent upon preparation; competence in algebra and trigonometry, or higher mathematics required.

CERTIFICATE PROGRAMS

General Education

APC-985

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 an 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. A minimum of 27 hours must be completed for the General Education Certificate.

<i>First Semester</i>		<i>Second Semester</i>	
EN 124 Basic English*	3	English Elective	3
MA 147 Algebra or		Exploratory Electives—Career	
MA 150 Survey of Mathematics	3-4	Education, Liberal Arts &	
HD 150 Reading and Learning Skills	3	Sciences	<u>9-12</u>
HD 100 Studies of the Person	3		12-15
Physical Education	1		
Exploratory Elective—Technical, Vocational, Liberal Arts	<u>2-4</u>		
	15-18		

NOTE: Some students will remain in this program for only one semester, some will remain a year, and some will continue into other programs at the College.

Individual Studies

See previous description of Individual Studies.

*Students may take more advanced courses with approval.

Human Services

APC-949

The Human Services certificate program is designed for those who want to learn the skills and attitudes that are needed for entry-level positions in Human Service agencies and for in-service personnel who want to upgrade their skills, but who do not want to undertake the supporting academic courses required for the two year Associate in Applied Science degree. The program is flexible so that students may choose the courses and field experiences that are most appropriate to his/her interests and to his/her career goals.

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II or	
SS 291 General Psychology	3	EN 127 Technical English	3
HS 110 Introduction to		Human Service Elective*	3
Human Services	<u>3</u>	HS 298 Human Services Internship	3
	9	HS 291 Human Service Skills	1
		SS 297 Develop. Psychology	<u>3</u>
			13

SECOND YEAR

<i>First Semester</i>	
Human Services Elective*	3
HS 299 Human Services Internship	3
HS Human Service Skills II	<u>1</u>
	7

*Human Service Electives: HS 211, HS 251, SS 299.

Automotive Mechanics APC-926

This one-year Automotive Mechanics Certificate Program is designed to provide students with concentrated skill training for immediate employment. However, all credits can be applied toward an Associates Degree.

Emphasis is on practical hands-on experience in all aspects of automotive mechanics including engines, support systems, electrical systems, chassis, and power train. Customer relations is also stressed. Modern electronic equipment is used in highly individualized laboratory projects. Advanced placement and credit for prior learning in school and on the job are possible. Students in this program are expected to provide their own safety footwear, limited hand tools, and other personal items appropriate for automotive laboratory classes.

Graduates may be employed as mechanics helpers, mechanics, and related careers. Jobs are available in small shops, dealerships, and automotive repair chain stores.

<i>First Semester</i>		<i>Second Semester</i>	
AT 121 Introduction to Automotive Function*	3	AT 123 Internal Combustion Engine Support Systems*	3
AT 122 Theory of Internal Combustion Engines*	3	AT 226 Power Trains-Design Features and Analysis*	3
AT 124 Automotive Electrical Systems*	3	AT 227 Electronic Engine and Chassis Analysis*	3
AT 225 Automotive Chassis Systems*	3	AT 228 Consumer Relations and Services	3
Elective	<u>3</u>	Elective**	<u>3</u>
	15		15

GRADUATION REQUIREMENTS: Completion of the courses listed. Total semester hours—30.

*Course meets at the Voc-Tech Center. Students make own transportation arrangements.

**Business course recommended.

Clerk Typist

APC-935

This program leads to a certificate as a clerk typist after one year of study. It is designed to provide students with concentrated skill training for immediate employment. However, all credits can be applied toward an Associates Degree.

Emphasis is on applying basic clerical skills such as typewriting, administrative support procedures, and business communications. An individualized audio-visual tutorial instructional system is used by the instructor in some courses. Graduates will be prepared for employment as clerk typists, receptionists, and general office workers in business, industry, and government.

<i>First Semester</i>		<i>Second Semester</i>	
BU 134 Intermediate Keyboarding*	3	BU 234 Advanced Keyboarding	3
BU 235 Administrative Support Procedures I	3	BU 137 Business Communications	3
BU 239 Intro to Word Processing	3	BU 236 Administrative Support Procedures II	3
Elective	3	BU 230 Machine Transcription	3
	<u>12</u>		<u>12</u>

GRADUATION REQUIREMENTS: A minimum of 24 hours (27 hours if a student is required to complete BU 133 in preparation for BU 134) is required for the Clerk-Typist Certificate. The courses listed must be passed with satisfactory grades. Typewriting must be passed with a minimum grade of C.

*A student must have completed BU 133 or Equivalent.

Criminal Justice APC-947

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. Below is a suggested sequence of the courses required for this certificate.

<i>First Semester</i>		<i>Second Semester</i>	
EN 125 Freshman English I	3	EN 126 Freshman English II	3
Mathematics (Strongly Suggested MA 160 Statistics)	3-4	CJ 104 Criminal Law II	3
CJ 103 Criminal Law I	3	CJ 105 Principles of Criminal Investigation	3
CJ 106 Introduction to Law Enforcement & Criminal Justice	3	CJ 107 Police-Comm. Relations or CJ 108 Introduction to Juvenile Delinquency	3
CJ 112 Introduction to Police Organization & Management	3	SS 281 Introduction to Sociology	3
SS 291 General Psychology	3		15
	18-19		

GRADUATION REQUIREMENTS: Completion of the courses listed. Total semester hours—33.

Medical Information Processing

APC-045

The one-year Medical Information Processing certificate program is designed to provide students with concentrated skill training for immediate employment. However, all credits can be applied toward an Associates Degree.

Emphasis is on practical hands-on experience in medical terminology, medical transcription, and medical administrative support procedures, as well as basic office skills. An individualized audio-visual instructional program is used by the instructor.

Graduates may be employed as medical records aides, medical transcribers, medical word processing specialists, medical office support personnel, and related careers. Jobs are available in hospitals, medical clinics, physician's offices, government agencies, and other health and related agencies. Evening and Summer registration required.

<i>First Semester</i>		<i>Second Semester</i>	
BU 134 Intermediate Keyboarding*	3	BU 234 Advanced Keyboarding or Elective*	3
BU 235 Administrative Support Procedures I	3	BU 285 Medical Administrative Support Procedures	3
BU 283 Medical Terminology	3	BU 137 Business Communications	3
Elective	<u>3</u>	BU 287 Medical Transcription I	3
	12	Elective	<u>3</u>
			15
 <i>Summer Term</i>			
BU 288 Medical Transcription II	<u>3</u>		
	3		

Program Prerequisite: BU 133 or equivalent.

Suggested Electives: Computer Info. Systems, Word Processing, Humanities, Health, Social Science, Anatomy & Physiology, Human Development.

GRADUATION REQUIREMENTS: A minimum of 30 hours must be completed for the Medical Information Processing Certificate.

*A student must be typing at least 35 net words per minute at the end of BU 134.

Quantity Food Production APC-044

This program leads to a certificate in Quantity Food Production at the end of one year. It is designed to provide students with concentrated skill training for immediate employment. However, all credits can be applied toward an Associates Degree.

Emphasis is on practical hands-on experience in food selection and preparation, purchasing, cost control, hospitality management, and nutrition. An internship in the food industry is required.

Students will be prepared for positions in all areas of quantity foods: preparation, receiving, operations, purchasing and service. Graduates may be employed by owner operated restaurants, chain restaurants, contractual food service companies, and other agencies associated with the production of food.

<i>First Semester</i>		<i>Second Semester</i>	
FS 121 Intro. to Food Service & Sanitation	3	FS 123 Food Purchasing	3
FS 122 Food Preparation I	3	FS 124 Food Preparation II	3
FS 224 Hospitality Management	3	FS 130 Quantity Food Internship*	3-6
FS 225 Food and Beverage Cost Control	3	Elective (optional)*	<u>3</u>
HE 121 Nutrition	<u>3</u>		15
	15		

GRADUATION REQUIREMENTS: A minimum of 27 hours must be completed for the Quantity Food Production Certificate.

*Suggested Electives (optional)

SC 141, EN 125, HE 125, BU 103, HD 150, HD 221, HE 136, Social Sciences.

Students taking 3 semester hours of FS 130 must take a 3 semester hour FS elective.

Culinary Concentration (under development)

Secretarial Studies APC-927

This program is open to all students who have had 2 years of 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.

<i>First Semester</i>		<i>Second Semester</i>	
BU 134 Intermediate Keyboarding*	3	Bu 230 Machine Transcription	3
BU 137 Business Communications	3	BU 234 Advanced Keyboarding	3
BU 233 Advanced Shorthand	4	BU 236 Adm. Support Procedures	3
BU 235 Adm. Support Procedures	3	BU 239 Intro. to Word Processing	3
	<u>13</u>	Business Elective	<u>3</u>
			15

GRADUATION REQUIREMENTS: A minimum of 28 hours must be completed for the Secretarial Studies Certificate.

*Must have completed BU 133 or equivalent.



Word Processing Operator

APC-996

This program leads to a certificate as a word processing operator at the end of one year. It prepares students for positions as word processing operators in business, industry, and government. Most courses in the program can be used to meet the requirements for an Associate in Applied Science degree. Program Prerequisite: BU 133 Beginning Keyboarding or equivalent.

<i>First Semester</i>		<i>Second Semester</i>	
BU 134 Intermediate Keyboarding*	3	BU 230 Machine Transcription	3
BU 235 Administrative Support Procedures I	3	BU 234 Advanced Keyboarding or elective**	3
BU 239 Intro. to Word Processing	3	BU 236 Administrative Support Procedures II	3
BU 137 Business Communications	3	BU 240 Word Processing Applications	3
CS 110 Intro. to Computers	3	GA 104 Typography	3
	<u>15</u>		<u>12-15</u>

GRADUATION REQUIREMENTS: A minimum of 30 hours (33 hours if a student is required to complete BU 133 in preparation for BU 134) is required for the Word Processing Operator Certificate. The courses listed must be passed with satisfactory grades. Keyboarding and Word Processing courses must be passed with a minimum grade of C.

*A student must have completed BU 133 or equivalent.
 **A student must be typing at least 35 net words a minute at the end of BU 134.

COURSE DESCRIPTIONS

GENERAL NOTE: All courses described in this catalog will be regularly offered unless noted as follows: F - Fall semester only; W - late winter/ Winter term only; S - Spring semester only; S2 - Summer semester only. The College reserves the right to curtail or discontinue any course at any time without notice. The list is also reserved until the time a course is discontinued because it is obsolete or if the course has been identified from the curriculum as the last printing of the catalog.

Individualized Extended Learning

EM 300 Series

Individualized courses in various areas of study designed to meet particular student needs.

Internship

IN 299 Internship

1-4 s.h.

This course will serve as a structure for the acquisition of credit for professional academically applicable work experiences. Students who have satisfied the requirements related courses may be placed with an approved agency on a part-time basis. Participation requires the approval of a College representative and the appropriate employer. Evaluation of the student's performance will be the responsibility of the employer. A minimum of eight (8) semester hours of credit may be earned by any one student.

Prerequisite: Prerequisites as stated in course description.

Hours: to be arranged.

Independent Study

IN 299 Independent Study

1-4 s.h.

Course offers students the opportunity to investigate in-depth a selected area of study. Provided they obtain the approval of a faculty member and the permission of the Dean, students may submit proposals for independent study. One to four semester hours of independent study may be earned. Students enrolled for independent study will be expected to work regularly with their advisors and to demonstrate satisfactory proficiency in their particular area of study. Prerequisites, if any, will be arranged.

Hours: to be arranged.

Non-Credit Laboratory Courses

The purpose of these labs is to provide experiential instruction for students who desire a career-related field. Fees are covered as part of credit subject enrollment fees.

CO01 Computer Laboratory

Non-Credit

This course has been designed to provide experiential hands-on computer experience for those students enrolled in data processing and mathematics courses requiring understanding of computer operation and use of computer terminals.

Hours: will vary according to student needs.

CO02 Audio-Visual Tutorial Laboratory

Non-Credit

This course is designed to provide instructional support for those students enrolled in selected academic and social processing courses and to provide alternate instructional experiences for those who wish to learn independently.

Hours: will vary according to student needs.

CO03 Nursing Laboratory

Non-Credit

This course has been designed to provide instructional support for those students enrolled in nursing courses and to provide alternate instructional experiences for those who wish to learn independently.

Hours: will vary according to student needs.

CC04 Mathematics Laboratory

This course has been designed to provide remedial assistance in mathematics to students who are in need of the currently enrolled in any of the traditional mathematics courses offered at the college.

Hours will vary according to student needs.

Non-Credit

CC05 Accounting Laboratory

This course has been designed to provide remedial and supported experiences for those students enrolled in traditional accounting courses, and to provide additional assistance for those students who learn independently to update their vocational skills in accounting.

Hours will vary according to student needs.

Non-Credit

CC06 Study Skills Laboratory

Students will work with teachers under the supervision of the instructor, who will not be present during remedial programs to enhance the students' study skills and college preparation.

Hours will vary according to student needs.

Non-Credit

CC07 Electricity Laboratory

This course has been designed to provide hands-on electric circuitry experiences for those students enrolled in electrical programs, who require additional work in electricity.

Hours will vary according to student needs.

Non-Credit

Peer Tutoring

PT 201 Peer Tutoring

This course will serve as a structure for the awarding of credit for pre-arranged peer tutoring. Provided they obtain the approval of a faculty member to serve as recipient and the approval of the appropriate Academic Dean, students may contract to provide peer tutoring for one to three semester hours of credit in core courses. Students who serve as peer tutors are expected to confer regularly with their recipient and to provide tutoring services regularly to the students assigned to them. Evaluation of the student tutor's performance will be the responsibility of the recipient.

Number of credits received during one semester will be based on the number of students assigned to the tutor, number of different courses for which tutoring is provided, and the nature of the tutoring services needed to the students assigned.

Students cannot receive credit more for tutoring the same course(s).

A maximum of six (6) semester hours of credit may be used by a student under this program.

Prerequisite: Student must work on satisfactory by the recipient.

Hours of study per week: to be arranged.

3 s.h.

BUSINESS

Accounting

BU 121 Accounting I

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 receivables, accrued items, receivables, inventories, and plant assets; preparation of financial statements. Emphasis is on asset preparation. Computer assignments will be used.

Hours of class per week: 3

3 s.h.

BU 122 Accounting II 3 s.h.
A continuation of BU 121. Accounting for partnerships and corporations; control systems for departments; manufacturing; analysis of statements and data. Computer assignments will be used.
Prerequisite: BU 121. Hours of class per week: 3.

BU 221 Intermediate Accounting I F 3 s.h.
Corporate accounting emphasized. Major classification of items found in financial statements, including cash, investments, receivables, and inventories are analyzed. Computer assignments will be used.
Prerequisite: BU 122. Hours of class per week: 3.

BU 222 Intermediate Accounting II S 3 s.h.
A continuation of the studies in BU 221, including analysis of liabilities, stockholders equity, land, buildings, and equipment. Computer assignments will be used.
Prerequisite: BU 221. Hours of class per week: 3.

BU 224 Cost Accounting F 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 S 3 s.h.
Federal and State Income tax laws 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.

BU 229 Seminar in Accounting WI 3 s.h.
Reading and research on approved topics of special interest to the student. Written reports and oral presentations required. This course serves as an elective in the Accounting curriculum.
Prerequisite: Nine semester hours in Accounting. Hours of class per week: 3.

BU 261 Managerial Accounting F 3 s.h.
Course is devoted to the use, 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, budget, and decision-making.
Prerequisite: BU 122 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 structure, its operations and its impact upon each of us as employees, as consumers, as individuals, and as members of society. Course designed to acquaint the student with major disciplines of business such as: management, marketing, finance, human resource management and production management which the student may choose as career core for future study and training. Case studies and computerized and manual business games are used.
Hours of class per week: 3.

BU 103 Mathematics of Business Finance 3 s.h.
Review of the basic fundamentals and use of shortcut operations in arithmetic computations. Use of the hand-held calculator is stressed. Instruction in financial topics dealing with bank loans, interest, credit cards, bank reconciliation, property taxes, payroll, inventory, depreciation, trade and cash discounts, partial payments, markup and markdown, and present value. If time permits, an introduction to financial statement analysis.
Hours of class per week: 3.

BU 110 Salesmanship

3 a.h.

Course provides an overview of professional salesmanship practices and analysis of business types and buying practices. The approach and development of sales strategy, selection of sales methods and procedures in sales planning situations. Emphasis on selling consumer and industrial products.

Prerequisite: BU 100. Hours of class per week: 3.

BU 111 Marketing

3 a.h.

An overview of the concepts, practices, trends and problems existing in marketing. A study of the distribution hierarchy of merchandise, their movement of goods and marketing of services and development of marketing research.

Prerequisite: BU 100. Hours of class per week: 3.

BU 112 Personnel Management

3 a.h.

Course focuses on fundamental of administrative personnel practices and techniques of personnel management. Emphasis is placed on screening and selection, compensation, performance appraisal, training and management development as well as personnel planning and personnel's changing role in dealing with an ever changing work force.

Prerequisite: BU 100. Hours of class per week: 3.

BU 113 Production Management

3 a.h.

Overview of course will provide a formal view of production/operatives management and their activities and operational functions.

Administrative of production areas and the problems involved are included with special emphasis.

Prerequisite: BU 100. Hours of class per week: 3.

BU 114 Supervision

5 a.h.

Study of the supervisor, "key person" in a company's chain of command. Supervisory role, responsibilities, supervisory, subordinates, and peers. Study of the skills, attitudes and personality qualities for effective supervision. Emphasis placed on practical solutions to supervisory problems within supervisor's authority and responsibility. Lectures, case studies, and role-playing instructional techniques used.

Prerequisite: BU 100. Hours of class per week: 3.

BU 115 Introduction to Finance

3 a.h.

Course introduces the student to the role of finance in modern business operations, covering aspects of both internal and external financial requirements and transactions related primarily to management's perspective.

Prerequisite: BU 100 through intermediate. Hours of class per week: 3.

BU 116 Credit Administration

3 a.h.

Course designed to train the student for a possible career in credit management, introducing the student to the actual problems of granting credit as faced by institutions such as banks, finance companies, and other lending institutions.

Prerequisite: BU 100. Hours of class per week: 3.

BU 117 Small Business Management

3 a.h.

Course provides essential concepts of starting and operating a small business. Topics covered include: sales procedures in starting a small business, record keeping, financing, labor law, production techniques, profit planning, cost control, treasury control, credit policies, sources of information, and business operations.

Prerequisite: Not open to first semester students except with permission of instructor. Hours of class per week: 3.

BU 118 Advertising

3 a.h.

Survey of the advertising field, policies, procedures, and practices in planning and executing various types of advertising and selecting media.

Hours of class per week: 3.

BU 171 Business Law I**3 s.h.**

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 businesses. Approach used includes case and text analyses and discussion.

Hours of class per week: 3.

BU 172 Business Law II**3 s.h.**

This Business Law course presents an in-depth treatment of areas such as: Agency and Employment, Partnerships, Corporations, Commercial Paper, etc. Career oriented content related to entrepreneurship, civil service, and professional exams will be stressed.

Hours of class per week: 3.

BU 173 Business Statistics**S 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 179 Business Organizations**3 s.h.**

Course structured to introduce the student to relationships between management personnel and the organizations for which they work. Emphasis placed on tracing management activities, showing how these become organizational practice and policy, and how practice and policy interface.

Hours of class per week: 3.

BU 199 Career Preparation**S 1 s.h.**

Primary objective of the course is to help prepare students for successful entry into work organizations. Included are such topics as resume preparation, interviewing skill development, evaluation of employment opportunities, exploration of personal career objectives and job search methods. This course will be offered pending faculty approval.

Hours of class per week: 8 two-hour sessions or 10 one-and-one-half hour sessions.

BU 243 Retail Management**S 3 s.h.**

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. Hours of class per week: 3.

BU 250 Management Decision Making**S 3 s.h.**

Course is an in-depth approach to the facets of managerial decision making, emphasizing the role of "Middle Management" in the decision process. Emphasis is placed on the case study approach using the techniques of computer simulation, seminars and role-playing.

Prerequisite: BU 101 and other Management Option course. Hours of class per week: 3.

BL 255 Management and the Law

3 1st

An environmental approach to the study of law, that is, a study of the nature, formation, and application of law to business and business decisions. This course takes a systems approach rather than the traditional narrow approach of detailed substantive rules in areas such as contracts, agency, etc.

The course topics will include: a discussion of the Contracted Person, etc., the power of the federal government to regulate business; the Constitutional basis for such exercise of power; the growth of Administrative Agencies as a result; the controls exercised by such agencies affecting businesses in such areas as stock markets, antitrust, price discrimination and consumer protection. Lectures and case analysis are featured in this course.

Prerequisite: Administrative Law Business course or permission of instructor. Fees of \$100 per week. 3

BL 262 Introduction to Investments

3 1st

Course designed to identify market structure, investment importance of risk, growth and income, portfolio analysis. Topics will include stock market research, buying and selling techniques, capital gains and losses, and tax considerations supported by Federal and State regulations.

Fees of \$100 per week. 3

Computer Information Systems

CS 100 Computer Concepts for Microcomputers

1 1st

This course teaches students with an introductory background of computer terminology, applications, microcomputers and hands-on experience related to the microcomputer personal computer. Emphasis will be on preparing the student to effectively function in "user" or "operator" mode. This is "programmer" for a variety of microcomputer equipment. This course will function as a first step in computer literacy. It is intended to support the students in professional settings that will require "operator" level microcomputers and applications software as part of the computer literacy curriculum.

Fees of \$100 per week. 1

CS 101 Word Processing Using "Applesoft"

1 1st

Students will learn to use the microcomputer to process word processing documents. Topics include: system components, editing, formatting, and manipulation functions using "Applesoft" information management (word data base). Topics include word processing, printing and management of system files will be covered. "Applesoft" will be the most used word processing program used in this course. Additional software will be required. "Applesoft" is an integrated software package (word processing, spreadsheet analysis and data base management) developed by Richard Kenner for the Apple II series of microcomputers.

Prerequisite: Microcomputers or permission of instructor, or permission of instructor. Fees of \$100 per week. 1

CS 102 Electronic Spreadsheets Using "Applesoft"

1 1st

The course will provide an opportunity to introduce students to the concepts and applications of the "Applesoft" electronic spreadsheet program. Spreadsheets are used in the engineering, calculator and presentation of financial statements, and other data used as a tool for market-making. Students will be required to use the microcomputer to complete various projects assigned.

Prerequisite: CS 101 or equivalent or permission of instructor. Fees of \$100 per week. 1

CS 101 Data Base Management Using "Apparworks"

3 a.h.

Students will receive instruction with background and hands-on experience in the use of the "Apparworks" data base management technique. The course can be applied in any area of the computer field. Students that require getting and keeping information in an organized, efficient and retrievable format. "Apparworks" is a packaged software system which allows the user to add, delete and change data. The user-programmer to maintain and control the information.

Prerequisite: CS 100 or permission of instructor. Hours of class per week: 3

CS 102 Introduction to Computers

3 a.h.

Students will be required to introduce the terminology and concepts of computer systems. Topics include computer organization, peripheral devices, number systems, data base management, data processing, networking techniques, and an introduction to computer programming using the BASIC language. Students will be required to make use of available facilities to complete programming projects.

Hours of class per week: 3

CS 103 Programming: Assembly Language

3 a.h.

Students will study of Assembly Language including hardware, software, assembly language, and programming. Through real examples and business applications, the following operations or techniques will be covered: Add, Subtract, Multiply, Divide, Compare, Shift, Rotate, Logical Operations, Branching, and Interrupts. The basic instruction set will be studied with the ability to make effectively use assembly language in the design of programs and also to use and understand the technical manuals supplied by the manufacturer.

Prerequisite: CS 100 or equivalent work experience. Hours of class per week: 3

CS 104 Computer Programming [FORTRAN]

3 a.h.

Use of the computer for mathematical problem solving and report generation. The course will be presented and utilize FORTRAN programming language. Laboratory exercises on the College computer.

Prerequisite: CS 100 or permission of instructor. Hours of class per week: 3

CS 105 Computer Programming [COBOL]

3 a.h.

Use of the computer for standard business applications. Programming techniques and the COBOL procedures through the utilization of the high-level programming language COBOL are emphasized. Laboratory exercises on the College computer.

Prerequisite: CS 100 or permission of instructor. Hours of class per week: 3

CS 106 Computer Programming [RPG]

3 a.h.

Use of the computer to produce standard business reports. Course is presented utilizing and utilize Report Program Generator as its programming language. Laboratory exercises on the College computer. Emphasis on report generation and data processing procedures.

Prerequisite: Completion of, or concurrent registration in CS 100, or permission of instructor. Hours of class per week: 3

CS 107 Computer Programming [BASIC]

3 a.h.

Use of the computer to solve problems involving repetition utilizing BASIC. Emphasis on Program Structure, Instruction Code. Topics to be discussed are conditional branching, looping, arrays, lists and tables, functions and sub-routines, dimensional programming, strings and chaining. Interactive laboratory exercises will be designed utilizing College computing facilities.

Prerequisite: CS 100 recommended. Hours of class per week: 3

CS 124 Computer Programming Pascal**3 s.h.**

Use of a microcomputer for instructing programming techniques with this high level language. Emphasis will be placed on problem-solving techniques, antibugging, debugging as used in the program development cycle. In general, concepts common to all computer languages will be covered. Interactive programming will also be demonstrated.

Prerequisite: Prior programming course and/or experience in FORTRAN or COBOL or RPG or BASIC. Hours of class per week: 3.

CS 130 Computer Information Systems**S 4 s.h.**

Limited to a restricted number of advanced students majoring in Computer Science and Data processing, involves an arranged schedule of work either in the College's Computer Center or an off-campus operating business data processing installation. Designed to offer the students direct involvement in an on-the-job situation.

Prerequisite: Two programming courses and permission of instructor. Hours of class per week: 1 hour seminar discussion, 15-20 hours on the job.

CS 133 Advanced Programming Techniques**3 s.h.**

Advanced programming techniques such as editing, sequential and random file processing, multiple I/O files, external subroutines, sort and on line transaction/screen processing using COBOL language. Total program design, structure, documentation, scheduling and presentations stressed. Laboratory exercises on the College computer.

Prerequisites: CS 121. Hours of class per week: 3.

CS 135 Systems Analysis and Design**3 s.h.**

Present methods and techniques which a systems analyst uses to analyze and design computerized business data processing systems. Emphasis is on the organization, personnel, procedures, files, documents, and equipment that make up a business system. Theory is reinforced through case studies which illustrate common applications. Written and oral project presentations provide hands-on systems analyst experience.

Prerequisites: CS 110, 113, and CS 133 or equivalent work experience, CS 120 recommended. Hours of class per week: 3.

Note: Several secretarial science courses utilize the **Audio-Visual-Tutorial (AVT)** system of instruction. AVT combines audio-visual and printed materials with instructional staff assistance tailored to meet each student's individual learning needs. This structured, yet flexible system permits the student to begin a course of study at a level based on previous knowledge, training and experience.

Secretarial Science

BU 113 The Typewriter Keyboard**1 s.h.**

This course is taught by the AVT (Audio-Visual-Tutorial) system which is a self-paced, individualized method of instruction. The keyboard is introduced requiring the touch method of operation. Basic typewriter operation, styles of type; typewriter maintenance and methods of correcting errors are taught. P or U grading used is based on timed writings.

Hours of class per week: 1.

BU 123 Personal Keyboarding**2 s.h.**

This course is taught by the AVT (Audio-Visual-Tutorial) system which is a self-paced, individualized method of instruction. Offered on a non-vocational basis. In addition to the work required in BU 113, the student will be required to select one of the following course options: Business Exploration; Liberal Arts; or Visual Communications. Option selected will determine the subject matter concentration. All options require the use of the touch system with emphasis on building speed and accuracy. The art of proofreading is also stressed.

Class hours: 2 to 4 per week to be arranged.

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

Presentation of the basic principles of Gregg shorthand theory. Intensive drill on brief forms. Development of skills in correct reading and writing techniques. Drills for spelling and punctuation in preparation for transcription.

Hours of class per week: 5.

BU 133 Introductory Keyboarding**3 s.h.**

This course is taught by the AVT (Audio-Visual-Tutorial) system which is a self-paced, individualized method of instruction. Development of basic skills and techniques of a beginning typist are the goals. Touch system operation is mandatory with an introduction in the use of carbon paper, simple tabulations, business and personal letters, memorandums, envelopes, and preliminary manuscripts with proofreader's marks and footnotes. In addition to production tests, timed writings with the emphasis on proofreading are stressed.

Prerequisite: Pretest Optional. Class hours: 3 to 4 class hours per week to be arranged.

BU 134 Intermediate Keyboarding**3 s.h.**

This course is taught by the AVT (Audio-Visual-Tutorial) system which is a self-paced, individualized method of instruction. Keyboarding II emphasizes the further development of speed, accuracy and proofreading. It also includes work in the production of business letters, reports, business forms, special tabulations, manuscripts with footnotes, bibliographies, programs, financial statements, letters of application, and resumes. Production tests and timed writings are used in grading.

Prerequisite: One year high school typing, BU 133, or equivalent. pretest optional. Class hours: 3 to 4 class hours per week to be arranged.

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.

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

BU 183 Intermediate Shorthand**S 4 s.h.**

Review and reinforcement of shorthand principles including brief forms and phrases. Emphasis will be on reading and writing, speed building commensurate with previous background. Development of transcription skills including spelling and punctuation and transcription at the typewriter will be included. Individualized practice in the AVT lab is required.

Prerequisite: BU 131 or equivalent. Hours of class per week: 4 and additional hours in the AVT lab.

BU 228 Machine Transcriptions

3 s.h.

This course is taught by the AVT (Audio-Visual-Tutorial) system which is a self-paced, individualized method of instruction. A comprehensive course designed to provide the student with the necessary skills to prepare typewritten work from a dictated source. Material to be transcribed will consist of various forms of business correspondence used in various different employment areas such as governmental, legal, medical, manufacturing, banking, retailing, etc. In addition, strong emphasis is placed on business language and vocabulary skills such as spelling, grammar, word choice, abbreviations, punctuation, punctuation, and word definition to prepare the student to write when necessary. Both ball and cassette transcribers are available. Not open to students who have credit for BU 129.

Prerequisite: BU 126, or BU 127, BU 124, or permission of instructor.
Hours of class per week: 2.

BU 232 Advanced Shorthand

F 4 s.h.

Emphasis on increasing speed and accuracy in taking dictation of new material and producing readable copy using a typewriter. Review of spelling, grammar, and punctuation is included. Production of readable materials is stressed.

Prerequisite: BU 123 or equivalent. Hours of class per week: 4 (scheduled twice in the AVT lab).

BU 234 Advanced Keyboarding

3 s.h.

This course is taught by the AVT (Audio-Visual-Tutorial) system which is a self-paced, individualized method of instruction. Keyboarding II reinforces the development of speed, accuracy, and producing special emphasis on production work which includes memos, letters, news releases, Circumferential letters and forms, business statements, legal documents, medical and technical reports, and special style letters and memoranda. Production both on a ball and cassette transcribers are used in practice. Class sessions are offered on campus in early spring.

Class hours: 3 to 4 class hours per week to be arranged.

BU 235 Administrative Support Procedures I

1 s.h.

An overview of office services and responsibilities of office employees will be provided. Course content includes procedures for processing mail, assisting with business reports, checking reception and telephone techniques, handling business, financial and payroll transactions, preparing expense reports, using reference materials, and utilizing method of duplicating.

Prerequisite: BU 123 or equivalent, or concurrent enrollment, or BU 127. Hours of class per week: 2.

BU 236 Administrative Support Procedures II

1 s.h.

Course operations and job application procedures are presented. Topics covered include making travel and conference arrangements, preparing minutes of meetings, and records management.

Prerequisite: Enrollment in BU 123 or equivalent, BU 235 is not a prerequisite for BU 236.

BU 239 Introduction to Word Processing

3 s.h.

This is an introductory course designed to introduce the terminology and concepts of word processing as part of the office automation/information centers in the modern office. Topics include an industry overview, word and content, and report generation and distribution. Emphasis will be on the people, procedures, and equipment utilized in word processing. Machine concepts will be presented. Laboratory exercises on electronic typewriters and word processors will be assigned.

Prerequisite: BU 123 or equivalent.

BU 240 Word Processing Applications

3 s.h.

Students will gain applications on word processors and be taught. Students will be required to apply these applications using word processors to prepare typical office communication programs. The use of a word processing procedures manual will be provided along with the skill of proofreading. An introduction to supergraphics and other communications will also be provided.

Prerequisites: BU 134, BU 233, or equivalent.

BU 241 Information Word Processing Practices

5 s.h.

Students will gain the word processing student actual on-the-job work experience in word processing practice. The duties performed will primarily be those of administrative support rather than administrative in nature. Although the primary application for this course will be the College's Word Processing Center, other word processing facilities, may be used. Self-learning will be major responsibility of the student. A minimum of 10 hours per week in a word processing center. At least two projects involving word processing background, research and writing, and proofreading, communication, and analyzing will be required.

Prerequisites: BU 237 and BU 231. Hours of class per week: 40.00.

BU 242 Word Processing Management

5 s.h.

After successfully completing this course, the student will understand the need for the effect of creating, implementing, and managing a program for improving the effectiveness and efficiency of organizational communications. Emphasis will be on analyzing word processing systems - personnel procedures, and equipment.

Prerequisites: BU 237 or permission of instructor. Hours of class per week: 5.

BU 243 Medical Terminology

6 s.h.

Students will understand medical terms. The logic behind the formation of medical terms, analysis of words, and interpretation and abbreviation skills will be used. Terms associated with medical systems will be covered. A/V slides and tapes may be used.

Prerequisites: None. Class hours: 3.

BU 244 Medical Administrative Support Procedures

6 s.h.

Students will learn the topics covered by the American Association of Medical Assistants' (AAMA) Office of the Certified Medical Administrative Assistant: patient relations, legal and ethical issues, communications, financial records, billing and collection, and records.

Prerequisites: BU 133 or equivalent. Hours of class: 3.

BU 247 Medical Transcription I

5 s.h.

This course begins with an introduction to medical transcription and use of medical reference. Medical dictation transcription is emphasized. Terminology, language skills, and transcription skills are systematically reinforced. Assignments are drawn from actual records. The A/V instructional system may be used.

Prerequisites: BU 133, or permission of instructor. Class hours: 3.

BU 248 Medical Transcription II

5 s.h.

This course continues to build on the material learned in Medical Transcription I. Medical references are emphasized. Specialty areas such as: cardiology, gynecology, pathology, otolaryngology, respiratory system are included. Terminology, language skills, and transcription skills will continue to be systematically reinforced. Electronic keyboards will be utilized. A/V instructional systems may be used.

Prerequisites: BU 247. Hours of class per week: 1.

Economics

EC 100 Introduction to Economics

3 s.h.

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 allocative activity is accomplished. Basic economic concepts will be introduced where necessary to explain economic activity. Special attention in discussion is given to topics such as: employment and unemployment, poverty and affluence, education and opportunities, interests and costs of living.

Hours of class per week: 3.

EC 201 Microeconomics

3 s.h.

This course is an analysis of economic theory applied with practical applications related to the consumer and the individual firm. It considers concepts of a firm's individual nature relative to price, distribution, production, costs and indifference curves under various market conditions.

Prerequisite: Sophomore status or permission of the instructor. Hours of class per week: 3.

EC 202 Macroeconomics

3 s.h.

An analysis of aggregate economic behavior with applications to the national present-day economy. A study in detail of macroeconomic fluctuations of the business cycle with special emphasis given to the income-expenditure theory of cycles and trade, forecasting, high level of employment and international trade. Monetary policies and economic growth policies are reviewed.

Prerequisite: Sophomore status or permission of the instructor. Hours of class per week: 3.

Educational Resources

ER 110 Science of Library & Information Research

5 1 s.h.

In combined science and applied courses four areas of library research and use will be considered: classification systems, card catalogs, periodicals, and reference materials. All formats of information, print and script (microfilm, slides, etc.) and search equipment will be considered. Concurrently, the student will prepare a subject bibliography according to a standard format.

Hours of class per week: 3, for five weeks.

ER 111 Research Procedures (composition).

5 1 s.h.

The bibliographic work and research techniques completed for ER 110 will be expanded by the student and a research paper will be written. There will be at least one formal class session on the organization and format of the bibliography and terminology.

Prerequisite: ER 110. Hours of class per week: 3, for five weeks.

ER 112 Learning Experience in Educational Resources

5 1 s.h.

Based upon competencies already gained from ER 110 the student will investigate, during supervised work periods, the various components of a complete library services, technical processing. There will be a preparatory session on introductory to library services, circulation, reference services, and technical processing.

Prerequisite: ER 110. Hours of class per week: 3, for five weeks.

Photography

ER 101 Principles of Photography

F 3 s.h.

The study of the history of photography, Balance of color, lighting and composition in the photography, basics of taking pictures (camera operation, exposure, films, filters, flash, lenses, composition).

Hours of class per week: 2 Hours of lab per week: 3. Students are required to provide their own film and supplies. Student owned cameras are helpful but not required.

ER 102 Advanced Photography

S 3 s.h.

Advanced photo techniques with emphasis on posing, lighting and composition; darkroom techniques, negative retouching, print enhancement and mounting. Studio and field shooting sessions with related darkroom work.

Prerequisite: ER-101. Hours of class per week: 2. Hours of lab per week: 3. Students are required to provide their own film and supplies. Student owned cameras are helpful but not required.

ER 103 Commercial Photography

S 3 s.h.

Course description: Emphasis on techniques and practices of advanced photography of small and large products with the use of large and small format cameras. Laboratory and field visitations with studio and location shooting sessions.

Prerequisite: ER-101. Hours of class per week: 2. Hours of lab per week: 3. Offered evenings only. Students are required to provide their own film and supplies. Student owned cameras are helpful but not required.

ER 150 Darkroom Techniques I

3 s.h.

Black and white film processing, printing, and enlarging. Students who finish this course will be familiar with the functions and purposes of darkroom equipment and darkroom procedures. Student required to submit completed portfolio of no less than ten finished 8" x 10" photographs.

Hours of lab and recitation per week: 3. Offered evenings only. Student required to provide own film and supplies.

ER 151 Darkroom Techniques II

3 s.h.

Color film processing, printing, and enlarging; retouching techniques. Emphasis on laboratory experience. Students completing this course will be familiar with the functions and purposes of color photo equipment and procedures for the darkroom. Student required to submit completed portfolio of no less than ten finished 8" x 10" color photographs.

Hours of lab and recitation per week: 3. Offered evenings only. Student required to provide own film and supplies.

Health, Physical Education and Recreation

100 Series-Service Program

1 a.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 Introduction and Physical Fitness***

111 Jogging

112 Introduction to Archery, Tennis, Racketball

113 Archery Skills

114 Canoeing**

115 Advanced Canoeing***

116 Golf & Racket Activities *

117 Volleyball* & Racketball

118 Racket Activities

119 Tennis & Aquatics F

121 Intermediate Racketball & Weight Training***

122 Tennis & Bowling F

123 Hockey

125 Skiing (Magnum)** S

PE 127 Cross-Country Ski Training II** S

128 Dance S

141 Beginning Swimming

142 Intermediate Swimming S

143 Lifeguarding* F

144 Skin & Scuba Diving S

149 Water Safety Instruction* S

Hours of class per week: 2

160 Series-Majors Program

1 a.h. each

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

PE 165 Soccer & Weight Training F

PE 166 Racket Activities & Fitness S

241 General Aquatics for P.E. Majors S

Hours of class per week: 2

HE 121 Nutrition

F 3 a.h.

A study of the basic nutritional needs required for the maintenance of active health. Special emphasis will be placed on relative nutritional needs for specific types of physical activity.

Hours of class per week: 3

HE 125 Advanced Nutrition

S 3 a.h.

An understanding of the nature and relationship between nutritional requirements and the nutrient values 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: HE 121. Hours of class per week: 3

*Prerequisite: see instructor.

**Course meets at sites other than main campus. Students make transportation arrangements.

***Course may be repeated once for additional credit.

HE 115 Personal Health

3 s.h.

A comprehensive course dealing with the application of scientific principles of effective health care. Topics include critical areas of health, the causes and effects of health problems, and the practical application of this knowledge toward positive action. Drugs used in the treatment of health, family hygiene, mental health, and sexual diseases will be covered.

Hours of class per week: 3

HE 116 First Aid & Safety Education

3 s.h.

A comprehensive course in first aid, accident prevention, and preservation in industry, community health, and recreation. The Red Cross Advanced First Aid & Emergency Care certificate will be granted following satisfactory completion of an emergency unit approved by the American National Red Cross.

Hours of class per week: 3

HE 117 Human Sexuality

3 s.h.

An examination of the many aspects of human sexual development, with a close special emphasis on problems that are self-actualizing. Some of the areas of study are: human sexuality as an expression of the total personality, structure-function, an individual's role in the structure-function in reproduction and sexuality, birth control, family planning and delivery, mechanisms of venereal, pregnancy and childbirth, sexual pleasure and diseases, marriage, marriage counseling, and sexual adjustment in life.

Hours of class per week: 3

HE 215 Community Health

F 3 s.h.

A practical investigation of environmental diseases including diet, sanitation, transportation, and control of disease in communities of disease and protection of health. Organized public health activities as conducted by local state, national and international agencies.

Participation in air and water pollution control, including efforts and sources of pollution. Field trips are arranged.

Hours of class per week: 3

PE 001 American Leisure Time Activities

1 s.h.

An introduction to leisure sport activities popular in America. Physical, social and cultural benefits of activities are stressed through participation. The course may not be used to satisfy Physical Education activity credit requirements.

Hours of class per week: 2

PE 001 Intramural Activities

1 s.h.

Students are required to participate satisfactorily in supervised sport activities for recreation and repair exercise. The schedule of activities is available from the Physical Education faculty. This course may not be used to satisfy Physical Education activity credit requirements, but may be required for additional elective credit.

Hours of class per week: 1

PE 101 Beginning Swimming

1 s.h.

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

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

PE 102 Intermediate Swimming

S 1 s.h.

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

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

PE 143 Littering and Water Safety

F 1 A B

A course structured for the highly skilled outdoorsman. All students who pass the initial screening criteria must also pass an additional aquatic skill test to be eligible to attend this course. Basically this individual should be able to do all the basic and advanced swimming strokes and have a reasonable knowledge of anatomy and physiology.

Upon successful completion of the course a student, based on timely submitted work, will be able to efficiently and effectively assist in rescuing a drowning individual.

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

PE 144 Skin and Scuba Diving

S 2 A B

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, practical experience, (associated with theory and stress 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 149 Water Safety Instruction

S 1 A B

This course will be a sequel to Summer Lifeguard. Students enrolling for W.S.I. will be offered instruction on teaching techniques. They will be involved in at least one independent study project and their practical work will include M.T.H. self-rescue. Each candidate will have student teaching responsibilities and evaluations.

Prerequisite: Successful completion of PE 143. Hours of class per week: 2

PE 173 Ice Fishing

A B C

Course takes advantage of College location near Adirondack Park. Covers three areas in chemistry (chemistry development and history of ice fishing and use of equipment). Talks by local conservation officials. Visit to local fishery. Much time spent on fishing on Saturdays and other days of the region.

Hours of class per week: 1

PE 201 Introduction to Health, Physical Education and Recreation

F 2 A B

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

Hours of class per week: 3

PE 211 Camping*

S 2 A B

Selected, practical experience in carrying out safe and responsible camping, craft, nature craft, watercraft, and forest and management of resources and their care.

Hours of class per week: 3

PE 225 Outdoor Education*

S 2 A B

This course is designed for students interested in management of wildlife and natural resources in New York State. Topics to be included are behavior, wildlife management and land cover. Field trips will be coordinated with the New York State Department of Fish and Game and the Conservation Department. Special arrangements will be in fishing and State forests.

Hours of class per week: 2

PE 241 General Aquatics For Physical Education Majors

S 1 A B

This required course is a broad introduction to aquatic activities including: basic strokes, simple forms of rescue, survival swimming, springboard diving, pool safety, water aerobics, and the American National Red Cross Water Safety Program.

Hours of class per week: 2

*Course meets at sites other than main campus. Students receive transportation arrangements.

PE 231 Lifetime Sports*

3 S 3 a.h.

Students are introduced to various techniques in two of the lifetime sports. Activities include walking and jogging.

*Hours of class per week: 3

PE 232 Lifetime Sports*

3 F 3 a.h.

Students are introduced to various techniques in two of the lifetime sports. Activities include walking and jogging.

*Hours of class per week: 3

PE 233 Lifetime Sports*

3 F 3 a.h.

Students are introduced to various techniques in two of the lifetime sports. Activities include walking and jogging.

*Hours of class per week: 3

Human Development

HD 101 Studies Of The Person

3 a.h.

This introductory course offers the student an opportunity to increase his self-awareness and more fully understand his development of his personal potential as he explores the concept 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 personal development, such as:

- 1. Identifying and key answers to the question, "Who Am I?"
- 2. Relationships (Relationships with other people and the environment)
- 3. Power (Exercising control over one's life)

Topics include: Self-actualization and the Five Functioning Forces, Values and Life Style, Developmental Testing, Life Processes, Man in Nature, Management of Stress, and Psychological Helplessness.

*Hours of class per week: 3

HD 120 Supervised Community Service*

3 S 3 a.h.

Students are assigned to work with clients in human service agencies in the community (Schools, Workshops for Retarded Adults, Special Education classes in the schools, Community Centers, 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 specific experiences into their work. Students also complete selected readings and class papers related to their human service experience.

*Prerequisite: Permission of the instructor. Hours of class per week: 1.

HD 150 Reading and Learning Skills

3 a.h.

This course reviews techniques designed to improve comprehension, vocabulary, study rate and critical reading. Various learning skills, such as note-taking, study objectives, writing research papers, Keweenaw Listening Lab and techniques of study for Keweenaw students will also be taught.

*Hours of class per week: 3

*Course needs of other than their main campus. Students make transportation arrangements.

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. Topics include: Blocks to Communications, Listening, Confrontation, Male-Female Relationships, Marriage, Family Relationships, Group Dynamics and Leadership. This course also contains a substantial unit of Transactional Analysis.

Hours of class per week: 3.

HD 225 Man's Search for Meaning 3 s.h.

(An Advanced Seminar On Individual Development.)

An in-depth study of selected theories which reflect current thinking in the area of individual development. The course will stress self-understanding through application of the theories under study.

Hours of class per week: 3.

HD 250 Stress and Its Management: A Psychosocial Perspective 3 s.h.

The course will focus on theoretical and applied aspects of stress and its management. Included will be physical and psychological ramifications of the stress response, and an examination of the literature regarding personal, cultural, societal, medical, vocational, and environmental implications of stress. The development of the needs/values systems and its relationship to the stress response will be discussed. Selected stress reduction techniques will be introduced.

Hours of class per week: 3.

HUMANITIES

English

EN 124 Basic 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. Not credited toward the Associate Degree English requirements, but may be used for elective credit.

Hours of class per week: 3.

EN 125 Freshman English I 3 s.h.

The first of a two semester sequence in communication skills, this course emphasizes basic techniques for writing and speaking improvement. Students learn to write a short essay which is grammatically and mechanically correct, logical and coherent. They also learn to deliver a clear, concise oral presentation. Research techniques and procedures for documenting sources are also covered.

Hours of class per week: 3.

EN 126 Freshman English II 3 s.h.

Students expand on the skills learned and the procedures introduced in EN 125. Some of the oral and written reports will require critical evaluation of imaginative literature and essays.

Prerequisite: EN 125. Hours of class per week: 3.

EN 127 Technical English

S 3 a.h.

Work in the field of technical writing and presenting technical subject matter with emphasis on descriptive process, product, technical reports and technical instructions. Students will be involved in technical writing and reporting.

Prerequisite: EN 126 (Students in the technical program may take EN 127 Technical English concurrently with Freshman English; other students may take EN 127 in conjunction with EN 126.)

Hours of class per week: 3

EN 148 Speech

3 a.h.

The course introduces the student to the theory of public speaking and affords the opportunity to practice both the theory and technical objectives of speech. Individual assignments and projects are used to the great benefit of the student. The course aims to improve the student's ability to communicate. Emphasis is placed on the spoken word. Public speaking techniques are studied and put into practice. Outside readings are required and the student prepares written assignments. The student is also given the opportunity to teach class members and other classes groups.

Hours of class per week: 3

EN 200 Short Story

S 3 a.h.

Study of the development of the short story from its origins in the oral tradition to the present. The course places on the artistic development of the literary genre by the study of structure and characters of a wide variety of 19th and 20th century short stories representing various authors and traditions. Course work includes critical papers and class presentations.

Prerequisite: EN 125 (EN 125 desirable). Hours of class per week: 3

EN 201 Masterpieces of World Literature I

F 3 a.h.

The course surveys world literature from the Greek and Roman classical up to the Renaissance. The readings include selections from Homer, Sophocles, Plato, Virgil, Dante, Chaucer, and other representative authors.

Prerequisite: EN 125 (desirable). Hours of class per week: 3

EN 202 Masterpieces of World Literature II

S 3 a.h.

The course surveys world literature beginning with the Age of Reason. Readings include Voltaire, Flaubert, Melville, Eliot, Mann and others.

Prerequisite: EN 125 (EN 125 desirable). Hours of class per week: 3

EN 203 American Literature I

F 3 a.h.

A survey of American literature from the Puritan period to the middle of the Nineteenth Century.

Prerequisite: EN 125 (EN 125 desirable). Hours of class per week: 3

EN 204 American Literature II

S 3 a.h.

A survey of American literature from the Middle of the Nineteenth Century to the present.

Prerequisite: EN 125 (EN 125 desirable). Hours of class per week: 3

EN 205 Modern Drama

S 3 a.h.

The course is an introduction to modern drama in literature and includes a representative sample of a number of plays. Aspects of modern drama such as structure, organization, and function of the drama are considered as well as the work of such dramatists as Chekhov, Pirandello, Ibsen, Brecht, and Albee. American dramatists such as O'Neill, Miller and Wilkins. Emphasis is placed on the meaning and impact of the stage theatricals discussion. Students will see a current dramatic production. A critical paper is required.

Prerequisite: EN 125 (EN 125 desirable). Hours of class per week: 3

EN 236 Introduction to Theater**S 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**S 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**S 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 works by leading Twentieth Century novelists will be considered.

Prerequisite: EN 125-126 desirable. Hours of class per week: 3.

EN 241 Great Themes of Literature**S 3 s.h.**

A study of the themes of Literature which stimulate and reflect human consciousness. A study of the themes will expose basic truths about man's behavior, his emotions, his inherent weaknesses, his capacity for greatness, and the darker complexities of his mind. ("Man and Woman"—"Power and Corruption"—"Heroes and Cowards"—"Authority and Rebellion"—"Crime and the Criminal"—"Conscience in Conflict.")

Hours of class per week: 3.

EN 243 Oral Interpretation of Literature**S 4 s.h.**

Study and practice in the performance techniques and literary material appropriate to dramatic oral presentation, either individually or in concert. Particular attention will be paid to vocal expressiveness, in three genres—prose, poetry, and drama. Opportunities to perform, publicly, as a Readers' Theatre group will be provided.

Prerequisite: EN 126. Hours of class per week: 4.

EN 245 World Drama**S 3 s.h.**

An examination of major dramas from the Greeks to the late nineteenth century, with consideration of their literacy, theatrical, and socio-cultural values. Readings will include representative plays from the following periods, epochs, or "movements": Classical Greece and Rome; the Middle Ages; the Renaissance; Neo-Classical; Restoration; Romantic; Realistic. Genres: tragedy, comedy, melodrama, farce, and various hybrids.

Prerequisite: EN 125 [EN 126 desirable]. Hours of class per week: 3.

EN 257 Creative Writing**S 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.

Theater

- TH 101 Theater History** **F 3 s.h.**
The evolution of dramatic art, political, economic, and social factors upon dramatic art during the major periods of Western civilization and their implications for the modern movement in dramatic theory and practice. Students will trace the development of the modern movement in dramatic art through the 19th century. Major attention is to be on Europe and America. Dramatic theory will be treated only briefly and with an eye to its influence on modern drama in the West.
Prerequisite: none per week: 1
- TH 102 Staging** **F 3 s.h.**
Practical and creative exercises with theory and practice of vocal, facial, and physical aspects of theater through study of scenery, sound, and lighting equipment.
Prerequisite: none per week: 1
- TH 103 Fundamentals of Acting** **S 3 s.h.**
Studies in movement and speech as aspects of dramatic art, exercises to enrich and control the expression and to develop and control the response of the body and voice for the performer. The course will also entail some preliminary application of the concepts of acting in the study of scenes. This will include analysis of the script for the acting objectives, and style.
Prerequisite: none per week: 1
- TH 201 Introduction to Theater Production** **F 3 s.h.**
The course includes the fundamentals of directing, principles of design, and organization and management of theatrical production.
Prerequisite: TH 101 desirable; completion of current requirement of EN 126; co-requisite: EN 126
Prerequisite: none per week: 1
- TH 202 Theater Seminar** **S 3 s.h.**
Students of theater study the challenges of theater practice. This course provides an intensive study of the relationship of theater to actual production; plays to be produced and directed by seminar students.
Prerequisite: TH 201 or permission of instructor. Hours of class per week: 1

Modern Foreign Languages

- FL 141-142 Elementary French I, II** **F.S. 3 s.h. each semester**
A two-semester course covering the fundamentals of oral comprehension, oral expression, and grammar. Reading in French familiarizes the student with the culture of France.
Prerequisite: none per week: 3
- FL 241-242 Intermediate French I, II** **F.S. 3 s.h. each semester**
A two-semester course that comprehends oral use of the spoken language and reading as well as its grammar and composition, and the cultural aspects of the language. Reading level is chosen to enable the student to converse in advanced French and to read and understand French I literature.
Prerequisite: FL 142. Hours of class per week: 3

FL 143-144 Elementary Spanish I, II**F/S 3 s.h. each semester**

A beginner's course, covering the fundamentals of oral comprehension, oral expression, and grammar. Readings in Spanish introduce the student to the Hispanic World and serve as a basis for conversations.

Hours of class per week: 3.

FL 243-244 Intermediate Spanish I, III**F/S 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.

FL 145-146 Elementary Italian I, II**F/S 3 s.h. each semester**

A beginner's course covering the fundamentals of oral comprehension, oral expression, reading, and grammar of the Italian language. Italian will be presented in culturally relevant situations that will help students become acquainted with the customs, life-style, and patterns of the Italian people.

Hours of class per week: 3.

FL 147-148 Elementary German I, II**F/S 3 s.h. each semester**

A beginner's course stressing the conversational aspects of the language. Essential grammar is checked and composition is introduced.

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

FL 149-150 Elementary Polish I, II**F/S 3 s.h. each semester**

A beginner's course covering the fundamentals of oral comprehension, oral expression, reading, and grammar of the Polish language.

Hours of class per week: 3.

Music

MU 100 The American Broadway Musical**F 3 s.h.**

This course teaches the fundamentals of reading music and vocal interpretation for the musical stage. The course will examine the scores of a number of Broadway musicals with special attention to Kern's *Smiles, Brinsford*, Rodgers & Hammerstein's *Oklahoma!* and Sondheim's *Company*.

Hours of class per week: 3.

MU 201 History of the American Musical**F 3 s.h.**

This course will trace the development of the American Musical through the use of music and lyrics. Emphasis will be placed on style development and aesthetic achievements. The Time-Life Record Series, "American Musicals", will be utilized. Students will have an opportunity to attend a Broadway Musical.

Hours of class per week: 3.

MU 102 American Broadway Musical Production**S 3 s.h.**

This course will consist of an in-depth study of the musical score, lyrics, and book of a particular Broadway show and will result in its production. These activities involve 10 hours of class and rehearsal time and will culminate with the performance of the show. This course may be repeated once for credit.

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

Art

- AR 101 Studio Art** 5 3ch
This course introduces students to the studio and provides the resources and skills to create two-dimensional artwork and to explore the techniques and materials used in the studio. Emphasis will be placed on the student's ability to create and evaluate their own work.
Prerequisite: None
- AR 102 Art History** F 3ch
This course is the history of art. A survey of world painting, sculpture, and architecture from prehistoric times to the Renaissance. Emphasis will be placed on the development of the visual arts and the historical and cultural context.
Prerequisite: None
- AR 103 Art History** 5 3ch
This course is the history of art. A survey of world painting, sculpture, and architecture from the Renaissance to the present. Emphasis will be placed on the development of the visual arts and the historical and cultural context.
Prerequisite: None
- AR 104 Computer Graphics** 3ch
This course introduces students to the computer and its applications in the studio. Emphasis will be placed on the use of the computer to create and evaluate artwork.
Prerequisite: None
- AR 105 Visual Design** 3ch
This course introduces students to the fundamentals of design. Emphasis will be placed on the use of design to create and evaluate artwork.
Prerequisite: None
- AR 106 3-Dimensional Design** 5 3ch
This course introduces students to the fundamentals of sculpture. Emphasis will be placed on the use of sculpture to create and evaluate artwork.
Prerequisite: None
- AR 107 Ceramics I** F 3ch
This course introduces students to the fundamentals of ceramics. Emphasis will be placed on the use of ceramics to create and evaluate artwork.
Prerequisite: None
- AR 108 Drawing I** F 3ch
This course introduces students to the fundamentals of drawing. Emphasis will be placed on the use of drawing to create and evaluate artwork.
Prerequisite: None

AR 211 Drawing II

5 3 a.h.

For experimentation in a variety of drawing media, with emphasis on personal expression. Emphasis on both technical and conceptual as well as conceptual drawing on a preparatory scale in drawing, such as a finished product. Emphasis will be placed on the subjective, creative process.

Prerequisite: AR 210, or permission of instructor.
Hours of class per week: 5

AR 221 Painting I

F 3 a.h.

For experimentation in regional awareness of painting as a means of visual thinking and communication. Basic concepts will be stressed such as composition, color theory, line, value, form, and space. Emphasis will also be on the variety of techniques available and personal creative solutions to specific painting problems.

Hours of class per week: 5

AR 231 Painting II

5 3 a.h.

For experimentation in the development of design concepts, composition, technique, and expressive methods in painting. Emphasis will be placed on individuals defining the direction of their work.

Hours of class per week: 5

AR 275 Pottery

F 3 a.h.

Emphasis on the variety of pottery a variety of forming techniques with emphasis on surface and glaze techniques, as well as ceramic sculpture. Concepts concerning clay, glazes, firing, and firing techniques will be developed. Students will be required to submit their own designs.

Hours of class per week: 5

AR 340 Fine Arts Seminar

5 3 a.h.

This course allows the student the opportunity to develop a professional profile. Emphasis on the history and history of selected works; portfolio presentation; slide presentation; documentary trends; exhibition participation; and discussion of relevant works in progress.

Hours of class per week: 5

Philosophy and Language

PHI 251 Introduction to Philosophy

F 3 a.h.

An introduction to philosophical problems and selected philosophers of the ancient world and medieval, Plato, Aristotle. Emphasis is placed on the rise of the scientific method in modern philosophy via methodological treatment of epistemological issues prior to the 17th century. Students will deal with problems from the basic divisions of philosophy: metaphysics, epistemology, ethics, with emphasis on critical thinking—a.k.a. logic. Philosophy as well as gaining knowledge of the historical development of philosophical ideas.

Hours of class per week: 3

PHI 254 Logic and Arguments

5 3 a.h.

This course presents logic as a means for analyzing social, political, and philosophical controversies. The approach is from the linguistic and semantic side, with training in using the formal of arguments within the context of conversational speech and writing. Formal or 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.

Prerequisite: Sophomore standing or completion of 6 hours of English. Hours of class per week: 3.

HU 258 Ethics

S 3 s.h.

The study of ethics provides unique insights into human behavior, personality, and goals. Beginning with topics like the acquiring of a moral code, the roles of reason and rationalization, the distinction between law and morality, and long-standing issues like psychological egoism and ethical relativism, the course develops methods for sorting out questions of morality, fairness and rights. By means of many familiar and practical problems the conflicting claims of egoists and altruists, the past and the future oriented, those advocating rules and those favoring net benefit are presented and evaluated. As with other studies in philosophy, the approach is to use relevant discussion, not dogma, and in this open manner analyze leading ethicists like Bentham, Mill, Kant, Ross, and Hume. The course ends with a study of punishment and rewards and theories of justice. Throughout, a problem and case-study method is used to introduce a large number and variety of moral problems.

Hours of class per week: 3.

HU 267 Modern Philosophers

F 3 s.h.

An introduction to philosophers and philosophic problems from Descartes to the contemporary period. Emphasis is placed on historical development of ideas and such movements as rationalism, empiricism, pragmatism, and analytic philosophy. Problems range from the mind-body dualism of Descartes to how we justify knowledge. This course will show how consideration of philosophical problems relates to our everyday lives, and influences scientific investigation and social/ethical concerns.

Prerequisites: HU 251 or background in Science, Math desirable. Hours of class per week: 3.

HU 271 Comparative Religions

S 3 s.h.

A survey course of world religions, major and minor, of the past and present. Religions of both Eastern and Western cultures investigated. Historical development of religion presented through mythology of Egypt, Greece, etc. as well as the historical progression of the semitic religions: Judaism—Christianity—Islam. Emphasis placed on determining similarities and differences among the various religions, but course also deals with the influence of religion on science, art, politics, etc., and their influence on religion.

Hours of class per week: 3.

Communications

CO 220 Introduction to Public Relations

3 s.h.

The student will be introduced to the principles, history and practice of public relations; and will develop an understanding of the processes that influence public opinion. This course will also cover the ethics and responsibilities of the practitioner to the media and the public, and discuss the public relations tools and resources that are available.

Prerequisite: EN 125.

Hours of class per week: 3.

SCIENCES

Biology

SC 111 Introductory Biology

F 3 s.h.

The course stresses the human relationship and social implications of biology. Historical significance of modern scientific achievements are discussed. Cellular structure, metabolism, and energetics are discussed in genetic and ecological perspective. Laboratory experiences are diversified. Laboratory methods include investigations with organisms such as *Amoeba* (Health), *Neurospora* (Evolution), *Escherichia coli* (Genetics), *Paramecium* (Physiology), and *Drosophila* (Genetics). Major emphasis will be placed on the study of human physiology.

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

SC 112 Introductory Biology

S 3 s.h.

A laboratory approach to plant and animal form, both living and extinct, utilizing microscopes, black and color photographs when available. An understanding of man's place and role in the biosphere is emphasized by topics such as comparative anatomy, phylogeny, and evolution as they apply to the human organism with a major emphasis on the human brain.

Physiology, experimentation, and library research are integrated by means of student projects. Included are dissection and micro-technique of representative vertebrates, invertebrates, and plants. Field collection, identification, and study of plants and animals of biological interest.

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

SC 113 Modern Biology

F 3 s.h.

A course in general biology of covering relative cell structure to function. Topics covered will include the origin and evolution of life, biochemistry, respiration, the chemical basis of metabolism, physiology of heredity and the genetic control of cell growth and division, the immunologic reactions of the cell environment. Physiological reactions of the vertebrate brain will be related and correlated with the current research in the field. Emphasis will be placed on molecular research, the nature and development of enzymes, and the use of experimental animals carried on concurrently in the laboratory portion of the course.

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

SC 114 Plant Biology

S 3 s.h.

Students learn the structure, function, and development of seed plants, known and unknown of the present and ancient significance of the plant kingdom. The course is designed to be applied in relation to their environment, bacterial interactions, and growth of seed-bearing plants. Higher plant groups will also be studied in relationship to their structure and environmental factors such as an animal. The major plant groups will be studied through the microscope. The interactions of the plants in natural and artificial groups will be considered with respect to such concepts as energy flow, carbon flow, nitrogen, plant succession, and human consequences. Major emphasis will be placed on their ecology of production, growth and utilization.

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

BI 173 Animal Biology

5 d.h.

An evolutionary survey of the animals, from Protista 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 176 Ecology

5 d.h.

A study of the interrelationship between living systems and their physical environment. Emphasis will be placed on the understanding of life's complexity, their behavior and chemistry. 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 181-183 Anatomy and Physiology

15 d.h.

Two-semester course exploring the human body as an integrated complex of systems. Fundamental concepts of biology, chemistry, and physics are explored as aids to understanding physiology of systems. Study of structure and function of each organ system, with emphasis on interrelationships. Special emphasis on cellular physiology, cellular reproduction, fluid and electrolyte balance, acid-base balance and effects of it, and endocrine and neurophysiology.

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

BI 252 Microbiology

4 d.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 clinical microbiology, and industrial applications. The laboratory will illustrate basic techniques in identification, culturing, and isolation of microorganisms as well as practical applications of microbiology.

Prerequisite: BI 171 or SC 141. BI 181 recommended, or permission of instructor. Hours of class per week: 3. Hours of lab per week: 3.

Chemistry

SC 176 Introductory Chemistry

3 d.h.

A course in the applications of chemistry to societal problems. Topics to be covered quantitatively: problem solving techniques using graph analysis and computers; basic principles in chemistry, such as atomic theory, chemical bonding, states of matter, and chemical reaction; organic chemistry and chemistry of life; forms of energy, including solar, nuclear and fossil fuels; toxic waste, radioactive waste, and acid rain; chemistry of food and additives; environmental chemistry of air, water and soil.

An important element of the course will be the preparation and presentation of a research paper on a chemical aspect of a topic selected by the student with the instructor's approval.

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

CH 173-174 Fundamentals of Chemistry CH 174-5 d.h. each semester

A course in the fundamentals of chemistry stressing basic principles. Topics included are: atomic theory, thermochemistry, thermochemistry, 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.

Engineering Science

ES 215 Mechanics: Statics

F 3 s.h.

Course designed for mechanical engineering, mathematics, and physics majors. Covers the principles of statics of particles and rigid bodies and includes the general methods of equilibrium to the solution of typical engineering problems and develops the analytical ability of the student. Topics covered are: vector algebra; forces and equilibrium; structures; shear and axial stresses; frames and trussing; centroids of plane areas and volumes; flexible bodies; bodies with distributed loads; friction; area moments of inertia and mass moments of inertia; bending stress.

Prerequisites: PH 113 and MA 127; corequisites of or concurrent registration in MA 128. Hours of class per week: 3.

ES 216 Mechanics: Dynamics

S 3 s.h.

Course designed for mechanical engineering, mathematics, and physics majors. Covers the principles of dynamics of particles and rigid bodies and includes the general methods of applying them to the solution of typical 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; mass properties; the gyroscope; central force motion; rigid body motion; angular momentum and fixed axis rotation.

Prerequisites: PH 113 and MA 127. Hours of class per week: 3.

ES 25 Electric and Electronic Circuits

S 4 s.h.

Course covers the design of linear and nonlinear circuits, designed for engineering and physics majors. Topics include: Kirchhoff's laws, superposition principle, Thévenin and Norton theorems, Thevenin's theorem, Norton's theorem, maximum power transfer, AC circuits and impedance, response of first and second order systems—steady state response and complete response; average and rms values; AC power; impedance; complex power; series and parallel circuit circuits; bridge networks; transfer functions; poles and zeros; classification of circuits and systems and operational amplifiers.

Prerequisites: PH 113 and concurrent registration in MA 255. Hours of class per week: 4. Hours of lab per week: 2.

Geology

SC 115 Earth Systems

3 s.h.

Overview of the Earth that emphasizes the structure, dynamics, and resources of the planet, and the interactions of the various Earth resources. Major topics include: the atmosphere and hydrosphere; geologic formation; surface and subsurface geology; the lithosphere; climate, sea level change, the atmosphere and its pollution; the geologic record; fossils; earthquakes, volcanism and landslides; geothermics; tidal and other resources of energy; hydrology and land use; wastes and their treatment; environmental issues and the future. Lab will include practical identification of minerals and rocks, topographic maps.

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

SC 116 The Ancient Earth

3 s.h.

History of the Earth's history, ancient environments, and the fossil record. The geology of time is a natural history that leads the history and present state of the world. The fossil record—earth's ancient forests, landscapes and their "evolution"; dinosaurs and the "unchanged species" of the past; the evolution and fossil record of plants and animals; the dinosaurs—when giants walked the earth; mammals, man and dinosaurs; the geological history of New York State and the Northeast. Lab will include study of the fossil record, marine geology, and comparative, detailed study.

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

Physics

SC 161-162 Introduction to Physics I, II E.S. 3 s.h. each semester

A two-semester approach to physics in which the characteristics of the new and old sciences are developed from laboratory investigations of the following topics:

1. Measurement, errors, transcendental equations, and vector analysis of motion.
2. Simple harmonic motion and general analysis of a spring-mass system, and a simple pendulum.
3. Character, mass, and electrical properties of matter, with emphasis on the history and meaning of the periodic table of the elements.
4. Mirrors, lenses and physical optics.

Prerequisites: SC 121 or equivalent—see instructor. Please note SC 161 is not required in order to take SC 162. Hours of class per week: 2. Hours of lab per week: 1.

PH 171-172 Physics I, II E.S. 4 s.h. each semester

A comprehensive course stressing the basic concepts, principles, and laws of physics, designed for engineering, mathematics and science majors. Areas covered are: kinematics of motion, heat and thermodynamics, electricity and magnetism, mechanics and waves. Atomic and nuclear physics are briefly studied. Emphasis is placed on experimental methods, laws of conservation, mass, momentum, and angular momentum are used as unifying themes in different branches of physics. Major emphasis is placed on developing the analytical ability and problem solving skills of the student.

Prerequisites: Concurrent registration in MA 127 or permission of instructor. Hours of class per week: 3. Hours of lab per week: 1.

PH 271 Physics III E.S. 3 s.h.

Course designed for engineering and physics majors. Topics covered are: Maxwell's equations and electromagnetic waves, special theory of relativity, photoelectric effect, Compton effect, pair production and annihilation, N-body, quantum mechanics, differential wave particle in a box, uncertainty principle, Schrödinger equation, Pauli exclusion principle and the periodic table, atomic structure, relativistic velocity, mass and length, bosons, fermions, Maxwell-Boltzmann distribution, quantum statistics, wave, dual theory of matter and wave-particle duality.

Prerequisites: PH 171-172 and MA 127. Hours of class per week: 3. Hours of lab per week: 1.

Introductory Sciences

SC 121 Basic Skills for Science and Technology 3 s.h.

A course designed for providing the preparation needed for students in the study of science and technology courses. Topics include recognizing the relevant scientific concepts which render problems, effective use of diagrams for the solution of problems, selecting relevant relationships of physical variables for solving problems, mastery of needed mathematics of formulas, manipulating algebraic relations and of solving of equations in terms of systems representing systems, use of relevant laws and the conservation, dimensional analysis, effective use of graphs for solution of problems, applying relationships rigorously in the solution of technical problems, use of measuring devices, and data analysis using derivatives. Not limited to the Associate Degree science requirements, but may be used for meeting credit.

Hours of class per week: 3.

SE 110 Science, Technology, and Society

5 34h

A course on the nature of science and technology and on the interaction between scientific methods and society. The nature of science and the scientific method are explored through a study of historical, cultural, philosophical and scientific case studies of science. The history of technology, the extent of modern technological complexity, and the nature of technological change and the environment are approached through a study of the history of different systems of power and methods of transmission of knowledge. The history of science, the history of technology, the history of the environment, and the history of the scientific method are discussed. The course is designed to provide a broad overview of the history of science and technology and the environment and to discuss the relationship between them.

SE 112 Environmental Science

5 34h

A course designed to provide an overview of environmental problems—energy, pollution, and resource management. The course covers the history of environmental science, the nature of environmental problems, the history of environmental science, the history of environmental policy, and the history of environmental management. The course is designed to provide a broad overview of the history of environmental science and technology and the environment and to discuss the relationship between them.

SE 114 Introduction to Physical Anthropology

3 4h

A course designed to provide an overview of the history of anthropology and the nature of the field. The course covers the history of anthropology, the nature of anthropology, the history of anthropological theory, and the history of anthropological practice. The course is designed to provide a broad overview of the history of anthropology and the nature of the field and to discuss the relationship between them.

Mathematics

MA 101 Basic Technical Mathematics

F 44h

A course designed to provide an overview of the history of mathematics and the nature of the field. The course covers the history of mathematics, the nature of mathematics, the history of mathematical theory, and the history of mathematical practice. The course is designed to provide a broad overview of the history of mathematics and the nature of the field and to discuss the relationship between them.

MA 112 Technical Mathematics

4 4h

A course designed to provide an overview of the history of mathematics and the nature of the field. The course covers the history of mathematics, the nature of mathematics, the history of mathematical theory, and the history of mathematical practice. The course is designed to provide a broad overview of the history of mathematics and the nature of the field and to discuss the relationship between them.

MA 147 Algebra

4 s.h.

A modern approach to introductory algebra. This course is designed for students who have a limited mathematical background. Topics include sets and number systems; operations; exponents; polynomials and rational expressions; first degree equations; functions and graphs; verbal problems. Not credited toward the Associate Degree mathematics requirements.

Hours of class per week: 4.

MA 150 Survey of Mathematics I

3 s.h.

An overview of mathematics for the non-science student. Topics include elementary symbolic logic; introductory and theory; matrix systems; number bases; probability arithmetic; and properties of abstract mathematical systems. Not open to students who have credit for Intermediate Algebra, MA 151 or Math II. Not credited toward the A.S. degree in Math/Science or Engineering Science but may be used for elective credit.

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 enroll later in any of the following courses: MA 154, or MA 155. Topics include properties of real numbers; polynomials and rational expressions; equations, expressions and radicals; functions and graphs; simultaneous systems; logarithms; right triangle trigonometry.

Prerequisite: MA 147 or one year of high school algebra. Not open to students who have credit for Math II. Hours of class per week: 4.

MA 154 Pre-calculus Mathematics

4 s.h.

Background material for the study of the calculus. Topics include logic, sets and relations; functions, radicals, and graphs; inequalities and absolute value; exponential and logarithmic functions; circular functions and topics from trigonometry; complex numbers; synthetic division and solution of polynomial equations.

Prerequisite: Intermediate Algebra, MA 151, Math II, or permission of instructor. 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. Prerequisite for mathematics or science majors, although qualified students from other fields are encouraged to start this course. Topics include: inequalities, introductory analytic geometry, functions, limits, continuity, the derivative, differentiation of algebraic functions, applications of the derivative, antiderivatives.

Prerequisite: MA 154 or 3 1/2 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 II

4 s.h.

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

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

MA 160 Statistics

3 s.h.

A course designed to give a foundation in statistics for students in Business, Social Science, Education, Journalism, or Data Processing who are planning to transfer into the four year program. Topics include descriptive statistics; counting principles and probability; binomial, hypergeometric, and normal distributions; hypothesis testing using the normal curve; linear regression; correlation; analysis of variance; chi-square tests.

Prerequisite: Intermediate Algebra, MA 151, Math II, or permission of the instructor. Hours of class per week: 3.

MA 161 Mathematics for Electrical Technology I

F 3 s.h.

This course is designed to provide mathematical skills needed by students of the Electrical Technology curriculum. Topics include graphs, basic arithmetic, algebra and trigonometry, vectors, mensuration, simple probability, statistics, logarithms and applications of trigonometry. Prerequisite: MA 157 and concurrent registration in MA 162. This course is offered three times a year in September, 1961.

Prerequisite: High School Algebra (course of MA 157) and concurrent registration in MA 162. Permission of instructor. Hours of class per week: 3.

MA 162 Mathematics for Electrical Technology II

S 4 s.h.

This course is MA 161. Topics include applied trigonometry, area and volume, vectors, complex numbers, systems, Boolean algebra, mathematics of probability, statistics, mensuration, differential and integral calculus.

Prerequisite: MA 161 or permission of instructor, and concurrent registration in MA 161. Hours of class per week: 3.

MA 210 Survey of Mathematics II

S 3 s.h.

Survey of history of mathematics. This course includes topics selected from the following: geometry, algebra, statistics and graphs, probability and trigonometry, calculus, measurement and mensuration, history of mathematics, logic, and other related topics.

Prerequisite: Elementary Algebra or MA 157, and MA 161 or permission of the instructor. Hours of class per week: 3.

MA 214 Abstract Algebra

F 3 s.h.

Topics include the Mathematical and Set-theoretic system. Topics include sets, rings, groups, rings, integral domains, and fields.

Prerequisite: MA 161. Hours of class per week: 3.

MA 217 Analytic Geometry and Calculus III

4 s.h.

A continuation of MA 161. Topics include methods of integration, polar coordinates, parametric equations, cylindrical coordinates, lines, infinite series, Taylor's Series with applications, multiple integrals, vector calculus, partial differential equations and multiple integrals, and others.

Prerequisite: MA 161. Hours of class per week: 4.

MA 218 Differential Equations

S 4 s.h.

Topics include definition and properties of differential equations; differential equations of first, second and order, separable, Bernoulli's equation, linear homogeneous, general solutions to homogeneous and nonhomogeneous equations; differential operators, auxiliary equations, the Laplace transform and its inverse; systems of equations.

Prerequisite: MA 217. Hours of class per week: 4.

MA 250 Linear Algebra

S 3 s.h.

This course is required for advanced-year mathematics or science students. Topics include systems of linear equations, vector spaces, linear dependence, matrix, eigenvalues, eigenvectors, quadratic, determinants, congruence.

Prerequisite: MA 161. Hours of class per week: 3.

SOCIAL SCIENCES

History

SS 183 Modern Western Civilizations I

F 3sh

An introductory course in Western Civilization 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 II

S 3sh

Follows the same basic plan as SS 183 and is a continuation of that course to the present. The course studies the gradual 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

F 1sh

A study of the historical background of Africans in America and their contributions and impact upon America. Emphasis shall be upon the last 150 years and the recent civil rights and Black Power movement.

Hours of class per week: 3

SS 187 Origins of the American Revolution

3sh

An in-depth study into the political, economic, and social-cultural background of British America that resulted the War for Independence.

Hours of class per week: 3

SS 283 Survey of American History I

F 3sh

Analysis 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 II

S 3sh

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

S 3sh

Analysis is made of the social, political, and economic conditions in Communist Russia from the 1917 Revolution to establish a common background. Emphasis is placed on a study of the Soviet Union since the Brezhnev Revolution with examinations of Marxism, the Soviet government, the Communist Party, and the Soviet Union in international affairs.

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

SS 293 Diplomatic History of the United States Before 1900

S 1sh

This course will examine the relations of the United States with foreign nations from the American Revolution until the Spanish American War.

Hours of class per week: 3

SS 296 Israel Biblical Period to 1948

F 3sh

Major historical, political, social, and military developments from the time of Abraham to the emergence of the Modern State of Israel in 1948. Areas of concentration will include: Biblical Period, resistance against Greece and Rome; Life in the Diaspora; Rise of Jewish Nationalism; Growth of the Yishuv; British Mandate and the British Mandate; Arab-Jewish Confrontation; Migration; Palestine in WW II; War of Independence; Mass Immigration.

Hours of class per week: 3

Political Science

SS 191 Comparative Democratic Systems

F 3 s.h.

A comparative analysis of political ideologies, institutions, processes and policy problems of governments and politics in selected democratic political systems. The analysis will focus on the political systems of Great Britain, France, Italy, and West Germany.

Prerequisite: SS 100

SS 192 Comparative Communist Systems

S 3 s.h.

An analysis of the political ideologies and practices of Communist party states. Political systems and political behavior of Communist political systems, then courses will focus on the political systems of the U.S.S.R., The People's Republic of China, and several selected Eastern European countries.

Prerequisite: SS 100

SS 278 International Politics

S 3 s.h.

The systems of international relations. The state system, realism, and imperialism; the system of international organizations; international law and international relations; the system of international relations; with particular reference to the United States.

Prerequisite: SS 100

SS 282 American Political System

F 3 s.h.

The structure of the American political system, and explain the American Political system in general terms. The approach will be primarily behavioral and not ideological. The theoretical questions of this course will be "What Gets What, When, How, and Where?"

Prerequisite: SS 100

SS 283 Local and State Politics

S 3 s.h.

An analysis of the structure of governmental institutions and political practices at the local and state levels. The emphasis of the course will be intergovernmental relations and the structure of government of the state level or state governments daily affect the politics of the local level. Attention will be paid not only to structure, administrative and organizational, but also to the growing problems of the metropolitan areas such as urbanization, environmental problems, financial crisis, education, and the quality of life. The relationship between political and economic and political and policy outputs will also be discussed.

Prerequisite: SS 100 is preferred in the structure. Prerequisite: SS 100

SS 285 Community Power Structure

S 4 s.h.

An examination of community structure concerning the power structure and characteristics of community politics, along with the study of related empirical data. The study of community structure will be viewed from a critical perspective. The student will be required to read and write an empirical investigation.

Prerequisite: SS 100 is preferred in the structure. Prerequisite: SS 100

Psychology

PS 101 General Psychology

S 3 s.h.

A basic course in the psychology of human behavior is provided. A study of the theory and experimental methods of learning and motivation as determinants of behavior as well as the experimental methods of learning, motivation, and the nature of cognition.

Prerequisite: SS 100

SS 292 Abnormal Psychology

S 41

A consideration of the historical background of abnormal psychology, scope of abnormal theories, definitions, descriptions, causation, development, and treatment; application for study abnormalities of behavior.

Prerequisite: SS 191. Hours of class per week: 3.

SS 297 Developmental Psychology

S 42

A systematic consideration of the processes of development and behavior characteristics of man during each of the principal stages of life, i.e., childhood, adolescence, adulthood, and aging. Attention is given to cultural and social, as well as genetic factors which affect development.

Prerequisite: SS 191 or permission of the instructor. Hours of class per week: 3.

SS 298 Introduction to Gerontology

S 43

Provides a broad base of knowledge on the subject of human aging including the biological, psychological, and social aspects of the aging process. The course will focus on the acquisition of knowledge about aging and living skills that enhance the quality of life for persons in the later period. Resources and services available for the older person in the social world will be identified and described. Prerequisite: Completion of equivalent of SS 191.

Hours of class per week: 3.

SS 299 Personality Theories

S 44

A study of personality as a theoretical construct which includes an organized manner of structures and processes. Major models and how they are tested are used to discuss basic concepts of personality.

Prerequisite: SS 191 and SS 297 or permission of the instructor. Hours of class per week: 3.

Sociology

SS 180 Contemporary Issues and Problems

F 41

This course will examine the major issues of concern to the American nation, and to the world generally, at the time the course is offered. The issues and problems will include some that have troubled societies over a long period of time, such as poverty, mass education, racial tensions, peace and war, family characteristics, as well as others that may be just emerging. The course, in addition to offering a survey of the problems, will provide theoretical and/or conceptual frameworks to help the student understand the issues and problems of a greater depth.

Hours of class per week: 3.

SS 181 The Sociology of the Post Affluent Society

F 42

This course shall examine the literature regarding contemporary issues in agriculture, birth to growth, rising unemployment, rising prices, scarcity of non-renewable resources, pollution and other issues. This survey course will include the research of whether we really are beginning a new post-affluent society. The course will then examine the theoretical literature which explains the post-affluent society and social life.

Hours of class per week: 3.

SS 264 Minority Groups in America

S 45

Study of the role, the accomplishments, and the problems different ethnic, religious and minority groups have had in America.

Hours of class per week: 3.

SS 283 The Mass Media in Contemporary Society

5 3 a.h.

Selected topics include the history of American journalism, the impact of the mass media, mass communication, responsibility of media, media and politics, newspapers, radio and television systems of media around the world, and alternative approaches to the media.

Prerequisites: none per week: 3

SS 284 Introduction to Sociology

3 a.h.

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

Prerequisites: none per week: 3

SS 285 History and Sociology of Sport in America

F 3 a.h.

General or sociological study of sport, discussion of how sport is viewed in America, physical development in sport, training and testing youth and athletes in American society, the Black athlete, women in athletics, Title IX, The Coach - The athlete - and the marketing of professional, recreational sports, an overview and more.

Prerequisites: none per week: 3

SS 286 The Family: A Cross Cultural Approach

F 3 a.h.

Course identifies various family structures that characterize various contemporary societies, as well as family types that have characterized certain historical eras, including Greek and Roman, Islamic, Arabic-Saxon, and Modern Western families. Through the comparative approach, the similarities and dissimilarities of contemporary patterns will be discussed.

Prerequisites: none per week: 3

Prerequisites: SS 281 or permission of the instructor.

SS 287 Political Sociology

F 3 a.h.

The nature and meaning of the application of sociological theory to the study of political systems, the process of social and child political socialization, theories of socialization and socialization, Spenser analysis as a method of explanation, will be utilized.

Prerequisites: none per week: 3

SS 287 Social Psychology

5 3 a.h.

Current social behavior: A scientific attempt to understand and explain how the attitudes, feelings and behaviors of individuals are influenced by the actual, imagined, or implied presence of others.

The study of power—loving, hating, working, helping, trusting, fighting, communicating.

Prerequisites: 3 credit hours of Sociology or Psychology. Hours of class per week: 3.

SS 288 Deviant Behavior

F 3 a.h.

Course attempts to identify the conditions under which certain acts, characteristics, personal attributes or events are labeled as socially deviant. It is assumed that certain patterns of perceptions, definitions, and mutual consensus have to occur in a social organization for deviance to become a social reality. The intent, therefore, is to identify and define these patterns. It is the further intent of the course to illustrate that the production of deviance also reveals the nature of the social construction of reality. The course is offered primarily from the theoretical perspective of social interactionism.

Prerequisites: SS 281 or permission of the instructor.

Prerequisites: none per week: 3

HUMAN SERVICES*

HS 110 Introduction to Human Services

F 3 s.h.

This course will provide an introduction for the entry-level generalist in the human services. It will provide students with an overview of the field of human services, as well as the range of available community resources.

Hours of class per week: 3.

HS 211 Problems of Substance Use Disorders

F 3 s.h.

This course will introduce students to the multidimensional problems related to chemical dependence as well as to their treatment modalities. Included will be pharmacological, psychological, behavioral, societal, and legal aspects of chemical dependence.

Prerequisite: SS 291.

Hours of class per week: 3.

HS 251 Introduction to Developmental Disabilities

S 3 s.h.

The course provides an introduction to the nature and assessment of developmental disabilities and the skills necessary for working with them. A study of the psychological needs and adjustments required by those with physical, mental, and emotional handicaps is included. Resources and services available for the developmentally disabled in our area will be identified and analyzed.

Prerequisite: HS 110 and concurrent registration in SS 297.

Hours of class per week: 3.

HS 291-2 Human Service Skills

F,S 1 s.h. each

These courses provide the interns opportunity to reflect on their human service field experiences and integrate the insights they have gained in their internships. Discussion and analysis of field work experiences will be an integral part of this course. Combined with internships, these courses develop helping skills, including sensitivity, empathy, attending, questioning, confrontation, and problem solving. Examination and evaluation of client assessment, goal setting, case planning, and case management. Skill development in observing, listening, interviewing, recording, and reporting.

Prerequisite: Concurrent enrollment in HS 298-9.

Hours of class per week: 1.

HS 298-9 Human Services Internship

F,S 3 s.h. each

Human Services Internship is designed to provide work and learning experiences in the field of human services. Individualized field experiences will be developed with community human service agencies.

Prerequisite: HS 110.

Hours of class per week: to be arranged.

*Human Services courses are not credited toward Social Science requirements, but may be used for elective credit.

HONORS COURSE, SECTION, AND OPTION (PENDING APPROVAL)

ID. 281 Honors Section

5 34h

Students in this course will engage extensive study of the literature and in-depth consideration of social, historical, and local contexts of the human studies curriculum. Students will be asked to explore, interpret, and discuss the various psychological, historical, social, technological, or scientific terms. By this process, students will gain insight into the multifaceted nature of the topic under study. The overall goal of this program is to create an environment between a small group of students and an instructor to gain a better understanding of the world.

Prerequisites: Students must have completed the Honors Program (H) Curriculum or at least 30 hours of college credit and maintain a minimum grade average of 3.5 GPA approved from the Honors Program of Liberal Arts and Sciences.

Hours of study per week: 3

Honors Section:

The Honors Section of a course provides an advanced educational experience that goes beyond the usual course treatment. The Honors Section provides rather than just a course. The Honors Section provides the selected group of students with a more advanced and scholarly program to undertake the intellectual challenge of the Honors Section of the course. Honors Section of a course will be indicated on the student's transcript by adding "Honors" after the title of the course.

Prerequisites: Approval for the Honors Program is required from the instructor and the Honors Program of Liberal Arts and Sciences.

Honors Option:

The Honors Option of a course is added to a course to challenge the student to go beyond course requirements and explore new aspects of the course in greater depth or breadth through a research project, a critical essay, or an investigation of allied topics not dealt with in the course. The approach and content of the Honors Option course may vary from the subject of the intellectual challenge placed upon the student. Successful completion of a course with Honors Option will be denoted in the student's transcript by adding "Honors" after the title of the course.

Prerequisites: Approval for the Honors Program and approval from the instructor and the Honors Program of Liberal Arts and Sciences.

TECHNOLOGIES

Air Science* **

AV 101 Air Science I (Private Pilot) F

This course is designed to provide the student with sufficient aeronautical knowledge to pass successfully the required written examination given by the Federal Aviation Agency. Subjects covered in this course include: theory of flight, aerodynamics, airplane operation and performance, navigation, flight computers, communications, publications, regulations, instrument flying and emergency procedures.

Prerequisite: Commercial flight experience or permission of instructor.

AV 102 Air Science II (Instrument) S

This course instructs the student in all phases required in preparation for the Federal Aviation written examination for the Instrument Rating. Instruments theory, techniques and procedures, in conjunction with modern ILS, VOR, ADF, and radar facilities are stressed.

Prerequisite: AV 101, and related flight experience, and Private Pilot Rating or permission of instructor.

AV 201 Air Science III (Commercial Pilot) F

This course provides the student with the aeronautical knowledge and experience necessary to pass the Commercial Pilot written examination given by the Federal Aviation Agency. Professional attitude and performance evaluations are required during this course. Subjects covered in this course in detail are: basic aerodynamics, navigation, aircraft operation and performance, flight physiology, flight safety and emergency procedures, regulations, and communications.

Prerequisite: AV 102, and related flight experience, and Private Pilot and Instrument Rating or permission of instructor.

AV 202 Air Science IV (Flight Instructor) S

This course provides the student with the knowledge required to pass the tests for the Flight Instructor's Written Examination. This course is directed to fundamentals of teaching and effective techniques, the system of flight maneuvers, and an in-depth study of the principles of instrument flight instruction.

Prerequisite: AV 201, and related flight experience, and Commercial Pilot and Instrument Ratings or permission of instructor.

*Air Science courses may be developed as an option in the A.G.S. degree program Studies.

**The cost of flight experience (if required) is not included in the estimated costs listed in this catalog. Flight costs are established by the flight school and are paid directly to the flight school.

Automotive Technology**

AT 121 Introduction to Automotive Function

F 3 a.h.

A broad course dealing with the construction, principles of operation, and maintenance of various parts and support mechanisms. Consideration will be given to both the theory and shop practice methods of operation, special tools, automotive components, parts names, and basic working tool and terminology.

Prerequisite: None. Hours of class per week: 2. Hours of lab per week: 2.

AT 122 Theory of Internal Combustion Engines

F 3 a.h.

Investigates the basic principles of internal combustion engines, engine types, engine parts and systems. Compression, combustion, valve identification, and internal engine operation are studied through lab experience with elementary diagnostic techniques.

Prerequisite: None. Hours of class per week: 2. Hours of lab per week: 2.

AT 123 Internal Combustion Engine Support Systems

S 3 a.h.

Study of the lubrication, cooling, ventilation, and emission systems of the internal combustion engine. Experiments will be performed in the laboratory with test equipment and procedures.

Prerequisite: AT 121 or AT 122, SC 162 or permission of instructor. Hours of class per week: 2. Hours of lab per week: 2.

AT 124 Automotive Electrical Systems

F 3 a.h.

Application of the principles of electricity to the design, operation, service and repair systems of various vehicles. Includes generating and ignition systems.

Prerequisite: AT 121, AT 122, completion of concurrent registration in SC 162, or permission of instructor. Hours of class per week: 2. Hours of lab per week: 2.

AT 125 Automotive Chassis Systems

F 3 a.h.

General overview study of steering and suspension designs, including rear suspension, front geometry, tire design features and service, and standard and non-standard chassis systems.

Prerequisite: AT 121, SC 162 or permission of instructor. Hours of class per week: 2. Hours of lab per week: 2.

AT 126 Power Train—Design Features and Analysis

S 3 a.h.

Investigation of the utilization power train. Topics considered include clutches, manual transmission design, planetary transmission designs, drive lines, concentric shaft drives and differentials, axle and wheel bearing requirements. Laboratory activities will include identification, tests, measuring devices, and special processing of parts as required.

Prerequisite: AT 121, SC 162, completion of or concurrent registration in AT 125, or permission of instructor. Hours of class per week: 2. Hours of lab per week: 2.

AT 127 Electronic Engine and Chassis Analysis

S 3 a.h.

Engine diagnosis through the use of the Scan 947 Program Tester. The topics of oxygen, engine temperature and air-fuel ratio, application and function will be studied.

Prerequisite: AT 121, AT 124, SC 162, AT 125, AT 126, or permission of instructor. Hours of class per week: 2. Hours of lab per week: 2.

Students may meet at sites other than main campus. Students must transportation arrangements.

Students require special clothing or equipment, in addition to facts. Instructor will advise them.

AT 225 Customer Relations and Services

S 144

A course dealing with the concepts of wholesale and retail operation as they relate to service manager-customer relations, factory representation-dealer relations, and inspection and service for customer requests. The experience will include inspection of accessories units, air conditioning system analysis, and field observation of service operation and factory representation function.

Hours of class per week: 3.

Construction Technology* **

CT 121 Introduction to Building Trades and Construction Materials F 141

A basic course in construction materials and methods. Study of lumber, 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 I

F 144

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

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

CT 123 Light Frame Construction II

S 144

Emphasis in this course is roof covering, exterior trim, insulation, exterior siding, interior trim, flooring, and layout of porches and garages. Lab experience must be successfully completed.

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

CT 124 Blueprint Reading

S 144

Course places emphasis on working drawings, elevations, and the various notations, and scaling that accompany blueprint information. The student will also learn the variations, the purpose of structure, the architectural progress and work in blueprint, freely learn to obtain trade information by accurately reading and thoroughly understanding a set of blueprints.

Hours of class per week: 3.

CT 131 Introduction to Cabinetmaking

F 141

A basic course in cabinetmaking materials and methods. A study of the selection of cabinetmaking, wood and other materials, use of tools, and safety procedures will be included. Career opportunities will be presented. Field trips will be arranged.

Hours of class per week: 3.

CT 132 Cabinetmaking I

S 141

A basic course in cabinetmaking materials and methods of construction. Emphasis is on safety, proper use of hand and handpower tools, layout, estimation, materials, measuring and finishing. The student will be provided with the necessary performance in the classroom to enable the completion of one or more cabinetmaking projects in the lab.

Prerequisite: CT 131 or permission of instructor. Hours of class per week: 2. Hours of lab per week: 3.

*Course may meet a class other than main campus. Students make transportation arrangements.

**Students require special clothing or equipment, in addition to books, instruction and hand details.

CT 225 Masonry, Concrete and Steel Construction

F 3 a.h.

Analysis of construction practices, equipment and terminology relating specifically to masonry, structural components in light frame and light commercial construction. General structural components include foundations, wall masonry construction, roof construction and applicable building codes.

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

CT 226 Plumbing and Climate Control

F 3 a.h.

Analysis of construction practices and climate control, including use of tools, basic load calculations, steam and hot water heating, water distribution, venting drainage, and general plumbing requirements, and repair.

Prerequisites: CT 121, CT 122, CT 124.

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

CT 228 Construction Estimating

S 3 a.h.

Analysis of the elements of cost of construction. Includes technique of procedures in estimating construction costs of labor factors and overhead cost of a job. Includes cost records, source of cost, various drawings, bidding practices of the construction industry, and estimating and profit.

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

CT 229 Electrical Wiring

S 3 a.h.

Analysis of the wiring with installation of wiring, including terminal cable, ungrounded, and ground conductors of wiring boxes, hole boxes, rigid metal conduit and electrical cable, cables and conductors, and testing such systems.

Prerequisites: CT 125 or permission of instructor. Hours of class per week: 2. Hours of lab per week: 3.

CT 231 Principles of Soils

S 1 a.h.

Analysis of principles of soil mechanics, surface drainage and subsurface drainage; soil stress and strain, consolidation, compaction, strength and chemical characterization of soils; soil moisture, fertility and measurement. Preorganization of problems related to soil mechanics.

Hours of class per week: 1.

CT 232 Alternate Energy I

4 a.h.

Introduction to alternate energy available and non-renewable energy available; solar energy, wind energy, geothermal energy, and nuclear methods of collecting heating energy and methods of retrofit existing structures for proper collection, storage and distribution of available energy.

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

CT 233 Alternate Energy II

4 a.h.

Continuation of the solar and passive systems. Continuation of principles and methods of geothermal energy, CT 232, with more depth and applications in active and passive systems as needed by new structures and retrofit.

Prerequisites: Alternate Energy I (CT 232). Hours of class per week: 4. Hours of lab per week: 2.

Surveying

MA 141 Surveying I*

3 a.h.

Surveying I is an elementary course in surveying. It includes instrumentation of plane surveying and introduces the use and care of leveling instruments. Linear measurements and theory and practice of leveling are studied in coordinated lecture and laboratory.

Prerequisites: MA 142 or permission of instructor. Hours of class per week: 2. Hours of laboratory: 2.

*Classes alternate at sites other than main campus. Students make transportation arrangements.

Collaborative Career Learning (COCAL)

CL 199 Professional Career Preparation

1 sh.

Students will be presented with material to provide a better understanding of the American Economic/Employment system and their role as employees. Experiences of employment opportunities and exploration of personal career objectives will be included. Stress will be on employee-employer, employee-employee, and customer-customer relations. Job search, interviews, and resume writing will be discussed to assist students in preparing for the job market.

Prerequisite: Enrollment in Collaborative Career Learning program. Hours of class per week: 1.

CL 191-192 Collaborative Career Learning I & II

2 sh. each

These courses provide a structured approach to gain a broad understanding of career orientation, training, and development. Competency objectives are identified as a goal for learning. Local business and industry sites are utilized as classrooms/ laboratories. In addition, presenters, coordination meetings and activities structure with students. Personal areas of career study will be limited to those areas not covered by the college's traditional curricula.

Prerequisite: Enrollment in Collaborative Career Learning program.

Co-requisite: Six to nine credits of an employer-study related to career area. Hours of class per week: 18 at business & industry site.

Criminal Justice

CJ 103 Criminal Law I

F 1 sh.

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, business, and a discussion of the relationship between the Constitutional rights of the individual and the protection of society.

Hours of class per week: 1.

CJ 104 Criminal Law II

S 1 sh.

Comprehensive analysis of the rules of evidence and criminal procedure; law, social policy, presumption, real and circumstantial evidence, burden of proof, possible of self and jury, documentary evidence, hearsay, confessions and admissions. Law of arrest, search and seizure.

Prerequisite: CJ 103. Hours of class per week: 1.

CJ 105 Principles of Criminal Investigation

S 3 sh.

An analysis of the nature and purposes of criminal investigation. Current and future various methods of investigation, the interview, and the interrogation of witnesses and suspects, collection and preservation of evidence, use of informants, intelligence, surveillance and special investigation techniques; methods used in police science laboratory, ballistics, documents, serology, photography, and related forensic sciences.

Hours of class per week: 3.

CJ 106 Introduction to Law Enforcement and Criminal Justice

F 1 sh.

A survey of the historical and philosophical development of law enforcement; and analysis of the court system; the criminal justice process; Constitutional provisions placed upon the criminal justice system; emphasis given to the interrelationship between these agencies and future trends in law enforcement.

Hours of class per week: 1.

CE 107 Police-Community Relations

S 3 a.h.

Study of the historical and current factors involved in the area of human rights, police tactics, community police relations in the community, the role of police as peacekeepers and enforcers of order and discrimination and their effects and reactions by police in a changing and increasing society. The history and development of law enforcement is surveyed.

CE 108 Introduction to Juvenile Delinquency

S 3 a.h.

Study of the historical and scientific of the juvenile court system, police practices and the prevention and control of juvenile delinquency and the role of various agencies in the juvenile justice system. Special attention will be given to the role of the juvenile court, parole and probation systems as the utilization of juvenile court services. The course will involve providing professional information, research, police and knowledge of current delinquent behavior.

CE 109 Psychopathology

F 3 a.h.

Study of the nature and nature of psychopaths forms of criminality. This course will examine the factors which are related to criminal behavior from psychological, social and biological perspectives. A theoretical approach to the study of criminality and the role of the police and the role of the police in the control of these factors for law enforcement purposes.

CE 110 Introduction to Public Administration

S 3 a.h.

Study of the history, basic principles and objectives of public administration in the United States. Includes the major issues in the development of government, law, crime and justice, criminal justice, and public administration.

CE 112 Introduction to Police Organization & Management

F 3 a.h.

The principles of organization and management in their application to law enforcement systems. A study of police organizational structure, communication, and other related issues. Includes the study of the management and functions within the criminal justice system. Includes the functions of specialized units within police departments, such as: police research, police operations, internal affairs, community relations, crime data management, and management, police labor relations, management of information and communication, methods of law enforcement operations, the management of emergency services and broad on police operations and management.

CE 113 Police Sector Issues

F 3 a.h.

Study of the historical and current issues in the police sector. Includes the study of the historical and current issues in the police sector. Includes the study of the historical and current issues in the police sector. Includes the study of the historical and current issues in the police sector.

CJ 118 Hazard Mitigation and Emergency Management

3 C.H.

This course approaches the problems of Hazard Mitigation and Emergency Management from both a historical and a technical perspective. Students are given a broad conceptual knowledge of hazard types and causes as well as practical, technical information which is used by public service personnel involved in the management of hazardous situations. The course will cover hazard mitigation and emergency management of situations such as: storms, floods, earthquakes, fire, through burials, epidemics, nuclear-chemical accidents, transportation and food facility hazardous materials incidents, strikes, civil unrest, toxic waste problems, serial crimes, and other hazards and emergency situations.

Hours of class per week: 3.

CJ 121 Introduction to Corrections

3 C.H.

An analysis of Sentencing, Probation, Parole, Incarceration and After-Care Services for convicted offenders. Philosophical views of correction, community reintegration, punishment, and treatment methodologies will be discussed. Special emphasis will be placed on correctional personnel and career alternatives.

Hours of class per week: 3.

Electricity and Electronics

EL 125 Electricity I

3 C.H.

First course in the Electrical Technology curriculum. Investigates the fundamental concepts of voltage, current, and power as applied to both DC and AC (single phase) circuits. The nature of resistance, inductance, and capacitance are studied. Fundamental circuit analysis is developed by the application of the basic laws and theorems to functional electrical circuits. Applicable electrical instruments are used in the laboratory. Practical applications is stressed. The use of computers to solve circuit problems is also introduced.

Prerequisites: High school algebra, equivalent to MA 161 or MA 167. Hours of class per week: 3. Hours of lab per week: 2. Hours of recitation per week: 1.

EL 126 Electricity II

3 C.H.

A continuation of EL 125 where the transient response and the AC response to RLC circuits are developed. The operational principles and electrical characteristics of diodes are also studied. Transistors, vacuum tubes, operational amplifiers, and thyristors are studied with an emphasis on the practical applications of these concepts to electronic circuits. The ideal transformer is introduced. The parameters of active electronic devices are studied. Computer analysis are taught and used throughout the course.

Prerequisites: EL 125 and either MA 161 or MA 167; Co-requisite: MA 163 or MA 168. Hours of class per week: 3. Hours of lab per week: 2. Hours of recitation per week: 1.

EL 127 Instrumentation

3 C.H.

Students in this course will be introduced to a more detailed study of the test instruments used in all fields of electronics. Specific emphasis is placed on the theory of the oscilloscope, electronic meters, signal generators, and computerized metro instruments. A general study of the internal circuitry of these devices is also conducted. Measurement error, both human and mechanical, is studied. The student is also introduced to standards, transducers, frequency counters, chart recorders and computer aided measurements.

Prerequisites: EL 125, equivalent to EL 126. Hours of class per week: 3. Hours of lab per week: 2.

El. 224 Electronics I **F 5 a.h.**

This course covers the student's theory, design and application of circuits covering the following: AC circuits, series and parallel circuits, diodes, rectifiers, filters, capacitors, impedance, reactive power, AC parameters, transformer bias, small and large signal amplifiers.

Prerequisites: El. 220, El. 222. Hours of class per week: 4 Hours of lab per week: 3

El. 225 Electronics II **S 5 a.h.**

This course and other courses use the material developed in El. 224 as well as additional advanced circuit concepts. The high and low frequency responses of amplifiers are treated using Bode diagrams. Other topics include feedback, oscillators, active filters, comparators, and the half-bridge inverter. In addition, transient analysis using the Laplace transform is introduced as well as transmission lines topics such as reflection, standing and SWR reception.

Prerequisites: El. 224. Hours of class per week: 4 Hours of lab per week: 3

El. 226 Electric Machines **F 3 a.h.**

El. 226 is concerned with construction and operational characteristics and testing of synchronous, induction, and permanent magnet AC and DC motors and generators, as well as their applications. Also, primary concern is the basic principles of operation of synchronous, induction, and permanent magnet motors and generators, for these machines to be used in power systems for their own improvement. Both large power and polyphase induction and synchronous motors, their characteristics, and utility.

Prerequisites: El. 224, El. 225. Hours of class per week: 3 Hours of lab per week: 3

El. 227 Digital Electronics **F 3 a.h.**

This course covers the Boolean logic and the devices necessary to produce digital systems. Topics to be covered include such as AND, OR, NOT, NAND, and NOR gates, flip-flops, counters, decoders, multiplexers, latches, registers, RAM and ROM, and the design of digital logic circuits and their applications. Analytical techniques are used to design the circuits and to verify their operation. Strong emphasis is placed on the design of logic circuits and the student is required to produce their own set of TTL integrated circuits.

Prerequisites: El. 224. Hours of class per week: 3 Hours of lab per week: 3

El. 228 Industrial Electronics and Robotics **S 3 a.h.**

This course covers the theory and operation of semi-conductor devices and systems used in industrial circuits including fundamentals and applications of sensors. The student will be able to troubleshoot and repair industrial electronics such as PLCs, such as SCRs, photoelectric devices, timing devices, and sensors used for DC motors, and controls for AC motors and lighting systems. The student will be able to install, maintain, program, troubleshoot and repair industrial electronics in a factory setting. These topics will be covered and tested on a semester basis.

Prerequisites: El. 224. Hours of class per week: 3 Hours of lab per week: 3

El. 229 Introduction to Microcomputers **S 4 a.h.**

This course presents an introduction to microprocessor computer architecture. The student will learn the details of a current state-of-the-art microprocessor system. Topics include microprocessor system organization, registers, memory, addressing, instruction set, and interrupt and status. Students will be required to design and build a logic circuit such as a memory interface and a microprocessor control for a robotic application.

Prerequisites: El. 224 or equivalent. Hours of class per week: 3 Hours of lab per week: 3

Food Service Administration* **

FS 121 Introduction to Food Service and Sanitation F 3 cr.

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

Hours of class per week: 3.

FS 122 Food Preparation I F 3 cr.

An introduction into the fundamental skills required for proper food selection, preparation, and storage. The relationship between proper preparation methods 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: 2.

FS 123 Food Purchasing S 3 cr.

Techniques for quality food purchasing for profit and non-profit services. Specifications and standards of quality, grades, methods of purchase and arrangement for each category of food. A study is made of trends in food processing and the purchasing of commercial foods.

Prerequisite: HE 121, FS 121. Hours of class per week: 3.

FS 124 Food Preparation II S 3 cr.

The course is designed to emphasize the urgent requirements related to producing quantity food in a profitable business. Emphasis will be placed on such problems as safe food production, menu making, cost reduction, sanitation, and safety as they apply to quantity food production.

Prerequisite: FS 122. Hours of class per week: 2. Hours of lab per week: 1.

FS 125 Dietary Therapy S 3 cr.

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

Prerequisite: HE 125, SC 171, or permission of instructor. Hours of class per week: 3.

FS 126 Quantity Food Internship S 3 cr.

This course is the practical application of skills learned in Food Service Classes. It involves an assigned schedule of work effort in the College's Food Service department or other off-campus quantity food operations. It is designed to offer the students direct involvement in an "on-the-job" situation.

Prerequisite: FS 121, FS 122, FS 124, FS 125.

Hours of Class: One hour classroom, 10-12 or 15-20 hours on the job.

Note: Work experience may be substituted for internship requirement - subject to instructor.

FS 127 Hospitality Management F 3 cr.

This course is designed to emphasize the unique requirements of hospitality management such as traffic and merchandising procedures and flow, "Front of House" hospitality standards for dining room operations, barman and food/beverage operations, kitchen, cleaning supplies, specifications and standards, equipment specifications and design, "Front Desk" techniques and public relations will be covered.

Prerequisite: FS 121, FS 125 recommended. Hours of class per week: 3.

*Courses meet most of sites other than main campus. Students make own transportation arrangements.

**Students require special clothing and equipment, in addition to text books.

FS 216 Food and Beverage Cost Control **F 3 a.h.**

This course covers methods relative to the receipt, production, control, purchasing, and inventory control, and profit and non-profit food service systems.
Prerequisite: FS 121. Hours of class per week: 3.

FS 225 Fundamentals of Baking and Pastry **3 a.h.**

Practical fundamentals, approach to making French, Italian, puff and French pastry, and breads.

Prerequisite: FS 122, or permission of instructor. Hours of class per week: 2. Hours of lab per week: 1.

FS 237 Food Service Organization and Management **3 a.h.**

Course designed to give food service students the basic understanding necessary to operate a food service operation. Emphasis will be placed on budgetary management, cost accounting, and work force management.

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

FS 238 Food Services **5 a.h.**

Course focuses on work experience based upon all previous courses taken in food service administration. Students will rotate in restaurant and/or work positions. They will be responsible for the complete operation from the planning stage through the final service. Emphasis will be on planning the business, purchasing, cost control, maintenance, event service, and management of personnel. In addition to classes, a total of 20 hours must be completed by the student to satisfy this requirement.
Prerequisite: FS 121, 122, FS 123. Cost. Hours to be arranged.

Graphic Arts** **

MD 111 Engineering Graphics **F 3 a.h.**

This course covers drawing work of lettering, use of drawing instruments including the drafting triangle and parallel straight edge, descriptive, orthographic projection, cross section, descriptive projection, isometries and sketching.

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

MD 115 Electrical Graphics **F 3 a.h.**

This electrical graphics course is concerned with basic drafting techniques with the following restriction in mind. The course will introduce the basics of orthographic and descriptive projections, cross sections, dimensioning, and sketching. The student is then required to do electronic schematic diagrams and to the development of finished circuit board printed circuit and panel wiring diagrams. Other topics will include lay out diagrams, chassis drawings, graphs and charts, mechanical and industrial drawing techniques, and computer aided design. A circuit design project is required in this course.

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

MD 120 Architectural Drawing **3 a.h.**

Architectural drawing as related to functional planning of residential buildings, working drawings, mechanical plans, elevations, sections, details, notes, and specifications.

Hours of class per week: 2. Hours of lab per week: 1.

Prerequisite: MD 111.

Students in courses—see EDUCATIONAL RESOURCES

Students may meet at other sites than main campus. Students make transportation arrangements.

GA 101 Graphic Arts I

F 3ch

Introduction and orientation to graphic arts, to include the history of printing, basic principles and applications of offset printing, color composition, photography, airbrush, engraving, plate making, lettering, binding procedures, and the operation of various types of presses.

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

GA 102 Graphic Arts II

S 3ch

Advanced techniques and applications in copy preparation, camera work, engraving and plate making, press work and binding operations. Characterization of various types of paper and ink. Maintenance of equipment in operation.

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

GA 104 Topography

S 3ch

Function of type, type identification, point size, and style/composition. Composition, proofreading, type composition variables will be emphasized, coupled with practical applications.

Prerequisite: GA 101 or Equivalent in Direct Processing Certificate program. Hours of class per week: 2. Hours of lab per week: 2.

GA 105 Graphic Arts Layout and Printing Design

F 3ch

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 adjustments in projects.

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

GA 106 Graphic Arts Production

F 3ch

Use of laboratory equipment and techniques related to graphic arts problems in a controlled environment in various areas of visual communication.

Prerequisite: GA 101-103. Hours of class per week: 3. Hours of lab per week: 2.

GA 107 Production Management

F 3ch

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

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

Leather Technology

LT 101-102 Introduction to Leather Technology I, II

FS 3ch/
each semester

An introductory course designed to acquaint the student with the history of the leather industry and some of the general techniques involved in the manufacture of leather from raw skins to finished goods. The important leather manufacturing processes are covered. Emphasis is on the important factors that govern which kind of a leather will take through a job to produce a predetermined desirable or undesirable acceptable product and the physical and chemical changes that occur, depending on the products and use of customer's specifications. The course will include several field trips to local manufacturing plants.

Hours of class per week: 3.

LT 100 Leather Internship

3ch

This course consists of practical application of skills learned in leather technology classes. An approved number of work experience in some industry is required.

Prerequisite: LT 101 and LT 102. Hours of class per week: 10-12/15-20/industry rate per job per week per 3 credits.

LE 221 Principles of Leather Technology (Pre-tanning)

3 a.h.

A basic course dealing with leather manufacturing, topics include a study of leather, selection of hides and skins and chemical processes related to pretanning. Practical experiments will be conducted.

Hours of class per week: 3

LE 222 Leather Tanning and Coloring

3 a.h.

A study of leather and tanning processes. Topics include vegetable tanning, chrome and other mineral tanning, retan systems, and synthetic鞣料s, dyes and their application. Types of dye fastness, color fastness, finishing and measurement, and leather effects.

Prerequisites: LE 201, LE 202. Hours of class per week: 3

LE 223 Leather Finishing

3 a.h.

A study of leather finishing processes. Topics include requirements of leather finish, types of finishes, leather finishing methods, additives and accessories, and methods of application. Practical exercises will be conducted.

Prerequisites: LE 201, LE 202, or equivalent, or permission of instructor.

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

LE 224 Leather Analysis & Testing

3 a.h.

A study of leather analysis and testing processes. Topics include physical properties of leather, measurement methods for control of processes, moisture determination, tannin content, basic strength, moisture, and pH measures. Practical applications will be discussed.

Prerequisites: LE 201, LE 202, or equivalent, or permission of instructor.

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

LE 225 Tannery Management

3 a.h.

A study of tannery requirements of tanning tannery operations. Development of the tannery plant and installation of raw materials in production of the finished product will be covered. Tannery layout will be covered.

Prerequisites: LE 201. Hours of class per week: 3.

Machine Processes*

ME 210 Machine Processes I

3 a.h.

The construction, purpose and operation of lathes, drill presses, saws and rolling machines. The design, function and use of the theory of cutting angles, tool and cutter design, cutting speeds, feeds, and overruns, industrial safety, use of bench and layout tools, and safety measures, gauges and the selected machine shop practices used in machine and metal repair shops.

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

Natural Resources Conservation* **

NR 221 Fisheries and Wildlife Management I

F 3 a.h.

An overview to the principles of fisheries and wildlife management. An understanding of the basic of wildlife management in a contemporary context, but with sufficient knowledge of past efforts to guide present direction. A knowledge of the plants and animals of the United States with respect to their management and identification will be required.

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

Students may need to enter either their trout campus. Students make transportation arrangements. Weekend field trips may be required.

**Students require special clothing or safety equipment, in addition to tuition, instruction and travel costs.

NR 122 Fisheries and Wildlife Management II

5 3 s.h.

Utilization and an understanding of both the theoretical and operational aspects of the varied techniques used in the management of both fisheries and wildlife. Topics areas will include population estimation, census and manipulation of census results and food for both fisheries and wildlife, wildlife collection techniques, species management techniques, telemetry.

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

NR 124 Principles of Soils and Water

5 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 macropores.

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

NR 223 Forest Management I

F 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, silviculture, planning management and protection.

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

NR 224 Forest Management II

S 3 s.h.

Major topics will include tree physiology, major forest products, nursery techniques, planting, maintenance of wild-cherries trees—commercial and Christmas trees, forest protection—fire, insects and disease, forest influence upon the environment, harvesting techniques from the standing tree to the mill. Proper use and maintenance of related tools will be emphasized.

Prerequisite: NR 223. Hours of class per week: 3. Hours of lab per week: 3.

NR 231 Practical Skills in Conservation and Outdoor Recreation

4 s.h.

This is a basic level practical skills course in which students will work on individual or group projects assigned by the instructor. Projects will involve actual field experiences and will be selected to give students a high degree of introductory skills in work normally conducted in Natural Resources. Where possible the student shall work with Conservation agencies and other field agencies.

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

NR 232 Basic Research in Conservation and Outdoor Recreation

4 s.h.

In this research course students will work with the instructor in selecting a topic of research. The topic will be selected to give the student a strong introduction to methods and techniques of research. The student will pursue a line of field work along with studying subject related textbooks and literature. The student will document activities and will prepare a class presentation.

Prerequisite: NR 231, or equivalent and permission of instructor.

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

NR 233 Advanced Research in Conservation and Recreation

4 s.h.

The student desiring to take this course will submit for approval a detailed plan on researching a topic in Natural Resources planning or management. Upon being granted permission to pursue this topic, the student will conduct himself in both authorized field work and literature search. The student will submit both a comprehensive research paper and the results of his field studies for review by the instructor.

Prerequisite: NR 232 and permission of instructor.

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

Textile Technology

TT 101-102 Introduction to Textile Technology I, II

F-S 3 s.h. each semester

An introductory course designed to acquaint the student with the history of the Textile Industry and some of the general principles involved in the manufacture of textiles from raw stock to finished goods. Emphasis is on the important factors that govern which course a fiber will take through a mill to produce a predetermined desirable or aesthetically acceptable product and the physical and chemical changes that occur, depending on the product's end use or customer's specification. Part II will cover characteristics and manufacture of natural and manmade fibers, yarns and fabrics, spinning, knitting and weaving; fiber, yarn, and fabric production—including processes, equipment, and technologies involved. Part II will cover dyeing (coloring) of various fibers, yarns, and fabrics discussed in Part I. Natural and synthetic dyes, basic dyeing mechanisms, dye selection, classification and chemistry of dyes and various methods of dyeing, processes, and equipment will be introduced. The courses will include several field trips to local manufacturing plants.

Hours of class per week: 3.

TT 130 Textile Internship

3/6 s.h.

This course consists of practical application of skills learned in textile technology classes. An arranged schedule of work experience in area industry is required.

Prerequisites: TT 202, TT 204. Hours of class per week: 10-12/15-20 hours on the job per week per 3 credits.

TT 201 Advanced Textile Technology I

3 s.h.

This course covers the various ASTM and AATCC test methods used in quality control; use of computers in textile dyeing automation and color matching; environmental considerations and regulations; energy and economics; mill management and supervision.

Hours of class per week: 3.

IT 202 Textile Design

3 ch

Historical perspective for better study of the relationship of design and cloth, forms, and colors. The study of color, ornament and texture including laboratory of color and the study of color and its relation to design.

IT 203 Advanced Textile Design

3 ch

Advanced study of textile design, including color, texture, and form. The course includes the study of the preparation, selection, finishing and design of the textile. The study of the preparation, selection, finishing and design of the textile. The study of the preparation, selection, finishing and design of the textile. The study of the preparation, selection, finishing and design of the textile.

IT 204 Textile Finishing

3 ch

Historical perspective for better study of the relationship of finishing and cloth, forms, and colors. The study of color, ornament and texture including laboratory of color and the study of color and its relation to design.

IT 205 Advanced Textile Finishing

3 ch

Advanced study of textile finishing, including color, texture, and form. The course includes the study of the preparation, selection, finishing and design of the textile. The study of the preparation, selection, finishing and design of the textile. The study of the preparation, selection, finishing and design of the textile. The study of the preparation, selection, finishing and design of the textile.

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