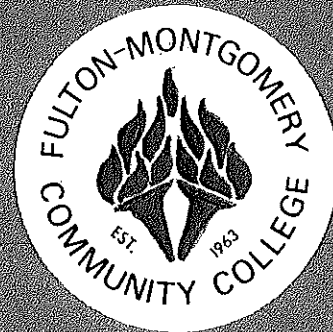


**BULLETIN  
OF PROGRAMS  
AND COURSES  
1972-1973**

**FULTON-MONTGOMERY  
COMMUNITY COLLEGE**



**JOHNSTOWN  
NEW YORK 12095**

# Bulletin of Programs and Courses

THIS BULLETIN CONTAINS PROGRAMS and course offerings for the Academic Year 1972-73. Courses are offered subject to adequate enrollment.

Policies of the College are subject to change by action of the Board of Trustees or, when appropriate, the Professional Staff. Such changes are announced in official College publications which are:

1. THE WEEKLY BULLETIN;
2. THE COLLEGE HANDBOOK;
3. THE COLLEGE CATALOG; and
4. OTHER BROCHURES as may be authorized by the College's Board of Trustees or other appropriate College authorities.

The following listing of programs and courses replaces Pages 39 through 67 in the 1969-71 College Catalog. A new catalog will be published during the 1972-73 academic year.

Fulton-Montgomery Community College will admit all who have either a high school or equivalency diploma, and are residents of Fulton and Montgomery counties, providing the applicants complete all the required admissions forms, take the Diagnostic Tests, and participate in Counseling.

Residents of other counties and out-of-state residents will be accepted under the same conditions as space permits. For 1972-73 it is expected that there will be ample space for residents of other counties. Valid Certificates of Residence must be filed each academic year by those residents of counties other than Fulton and Montgomery.

While the College will enroll a student who fulfills the requirements above, it reserves the right to limit the entrance to certain Programs and courses based on an analysis of the applicant's performance on the Diagnostic tests, his high school record, and other relevant information.

Any changes in the tuition, fees, financial aid, and other similar matters will be announced in appropriate publications.

It is the responsibility of the applicant and/or student to keep himself informed of any College policy or procedure changes as they may occur.

## Accreditation

*Fulton-Montgomery Community College* is accredited by the Middle States Association of Colleges and Secondary Schools and all its programs are registered with the New York State Department of Education. It is authorized by the Board of Regents of the University of the State of New York to confer upon its graduates the degrees of Associate in Arts, Associate in Science, and Associate in Applied Science.

All programs are approved for the training of veterans under the various public laws and the College is approved for the holders of New York State scholarships.

## Academic Year 1972-73

Aug. 18	Last day to pay fees by mail; Valid Certificate of Residence required; last date for refund of tuition deposit.
Aug. 30	Faculty reports Registration for all students not pre-registered Last date to pay fees without penalty
Aug. 31- Sept. 1	Faculty Seminars - New Faculty Orientation Orientation for new students
Sept. 4	Labor Day
Sept. 5	Classes begin
Sept. 5-8	Late Payment Period; Fees subject to Late Payment Penalty
Sept. 8	End of Late Registration; last date to add courses Last date to pay fees for Fall 1972; fees subject to Late Payment Penalty
Oct. 6	Last date for dropping courses without academic penalty
Oct. 23	No classes
Oct. 27	Midterm grades due
Nov. 1-22	Advisement and Pre-registration for Spring 1973
Nov. 22	Classes end 10 p.m.; Thanksgiving Recess
Nov. 27	Classes resume Last date to apply for financial aid for Spring 1973
Dec. 15	Classes end Last date to apply for degrees to be awarded June 3, 1973
Dec. 18-22	Final exams
Jan. 4	Mid-Winter Term begins
Jan. 5	Last date to pay fees for Spring 1973 by mail
Jan. 12	Last date to apply for full-time regular admission for Spring Semester 1973
Jan. 24	Mid-Winter Term ends
Jan. 25	Registration for students not pre-registered
Jan. 26	Orientation of new students
Jan. 29	Classes begin
Jan. 29- Feb. 2	Late Payment Period; Fees subject to Late Payment Penalty
Feb. 2	End of late registration; last date to add courses Last date to pay fees for Spring 1973; fees subject to Late Payment Penalty
Feb. 2	Final date for acceptance of applications for Fall 1973 Nursing Program

Feb. 19	No classes
March 2	Last date to drop courses without academic penalty
March 23	Midterm grades due
March 26-	
April 16	Advisement and Pre-registration for Fall 1973
April 18	Classes end; Spring Recess
April 30	Classes resume
May 18	Classes end
May 21-25	Final Exams
June 3	Commencement
June 8	Final day to register without payment of Late Payment Fee of \$10 for first 5-week and evening session
June 11	Classes begin for first 5-week and evening session
June 15	Last day to withdraw from first 5-week session with- out academic penalty.
June 22	Last day to withdraw from evening session without aca- demic penalty
July 13	Final day to register without late registration fee pay- ment of \$10.00 for second 5-week session
July 13	Final day of classes for first 5-week session
July 16	Classes begin for second 5-week session
July 20	Last day to withdraw from second 5-week session without academic penalty
Aug. 3	Final day of classes for evening session
Aug. 17	Final day of classes for second 5-week session

## Admissions

THE COLLEGE has an Open Door admission policy. This means that Fulton-Montgomery will accept as a member of its student body any person having a high school diploma or a General Educational (equivalency) Diploma. High school seniors are accepted tentatively pending completion of their graduation requirements. Although acceptance to the College is automatic under the above conditions, several curricula have prerequisites which must be met prior to entrance into that particular course of study.

You may begin studies as a full-time student at the College in either September or January. It is also possible for you to begin during one of the summer sessions.

Students desiring to attend full-time and part-time students wishing to enroll in a degree program (matriculate) are required to file a formal application with the College. A standard State University of New York application form is used for this purpose. This form may be obtained either from your guidance office or from the College Admissions Office.

You may expect to receive tentative acceptance to the College within about five weeks of your initiation of the application procedure. Acceptances are mailed within a short time of the receipt of the application form in every instance except Nursing. Nursing acceptances are sent in as a group in the Spring.

As part of the College's Admission procedure, you will be asked to take several tests (which have no bearing on your acceptance) in order to help us assess your achievement level in several areas. The tests are given in different parts of the State at different times of the year. You will also be asked to attend an Advisement and Pre-registration session before you begin your studies.

The College accepts applicants through the State University Admissions Assistance Centers\* and the Upward Bound Program.

\*Contact Director of Admissions for information

# Academic Regulations

THE PROGRESS OF STUDENTS at the College is indicated by the grades received in each course. The following grade system is used:

<i>Grade</i>		<i>Grade Points</i>
A	Excellent .....	4
B	Very Good .....	3
C	Average .....	2
D	Passing .....	1
F	Failing .....	0
I*	Incomplete .....	0
W	Withdrawal .....	0

The grade-point average is computed by multiplying the grade points earned in a course by the number of credit hours for the course, adding these products for each course and dividing by the total number of credit hours.

A student's standing in the College is determined by his cumulative grade-point average. Students whose grade-point average is unsatisfactory will be placed on probation. The minimum satisfactory averages at the end of each semester are:

First Semester .....	1.50
Second Semester .....	1.75
Third Semester .....	1.90
Fourth Semester .....	2.00

A student who has been placed on probation for two consecutive semesters will not be eligible to continue at the College. Students who do not attain a grade-point average of 1.00 or higher in any one semester are also ineligible to continue at the College.

A student otherwise eligible for dismissal may be placed on extended probation in accordance with regulations adopted by the faculty.

Attendance at all classes for which a student is registered is expected.

## Graduation

To be eligible for graduation, a student must complete at least 60 hours in courses appropriate to his degree with a cumulative average of 2.00 or higher. He must also complete satisfactorily two semesters of physical education, and GE 011, Seminar on College Life. The degree requirements for specific programs which may exceed these requirements are listed in the following pages. Students planning on graduating in June must file an application for a degree in the Dean's Office prior to Christmas Recess.

### **Graduation with Honors**

If a student has completed degree requirements with a cumulative average of 3.50 or higher, a degree shall be awarded with honors.

### **Withdrawal from the College**

The College is concerned that a student who decides to withdraw has a clear understanding of the reasons for this decision and is helped to formulate future plans that will be most beneficial to him. The institution is also concerned that there be an orderly withdrawal procedure so as to assure the student that when he voluntarily severs his relationship with the institution there be no procedural problems impeding his entering another institution or reentering this institution. This procedure is formulated on these principles and is not designed to impede withdrawal of a student, who should begin the process by conferring with the Dean of Students.

### **Dean's List**

In recognition of superior achievement a student who attains in any one semester a grade-point average of 3.20 or better will be placed on the Dean's List.

### **Credit on Proficiency Exams**

Fulton-Montgomery Community College cooperates with the New York College Proficiency Examination Program and the College Level Examination Program, and will grant credit towards a degree to students who receive satisfactory grades on the examinations in accordance with rules adopted by the faculty.

\*A grade of I indicates that, at the end of the course, some of the requirements were not completed by the student due to circumstances beyond his control. These requirements must be completed in the following semester or the grade of I automatically becomes F.



## Financial Aid

THE COLLEGE BELIEVES that a lack of financial resources should not be a barrier to educational opportunity. Therefore, the College participates in a variety of financial aid programs which lower any financial barriers which may exist. Prospective students are encouraged to contact the Director of Financial Aid if they feel financial difficulties may keep them from applying for admission. All students will receive a card with their admission acceptance letter enabling them to request an application for financial aid. Students must file a Parent's Confidential Financial Statement prior to applying for aid. These statements are available from high school guidance counselors or the Director of Financial Aid.

The College's application for financial aid may be used for the following programs:

1. *National Defense Student Loan* - You may be eligible to borrow up to \$1,000 per year repayable at 3% interest. Repayment starts 9 months after terminating your education. Repayment may be deferred while serving in the Armed Forces, Vista, or Peace Corps. A portion of the loan may be cancelled by teaching.
2. *Nursing Student Loan Program* - Nursing students may borrow up to \$1,500 repayable at 3%. Repayment starts 9 months after terminating full-time study, whether here or advanced study in nursing elsewhere. Payments are deferred while in the Armed Forces, Peace Corps or Vista. A portion of the loan, up to 100%, may be cancelled for service as a professional nurse.
3. *Educational Opportunity Grants* - Available for students who have exceptional financial need. Full-time students who would not be able to attend college without this assistance, may apply for these grants which are based on family income and may provide as much as \$1,000 in aid.
4. *Nursing Scholarship* - This grant program provides up to \$2,000 per year for full-time nursing students who have excessive financial need.
5. *College Work Study Program* - Students with financial need may work up to 15 hours per week on this part-time job program. Students may be assigned jobs on-campus or in non-profit agencies in surrounding communities.
6. *Educational Opportunity Program* - This program provides an average of \$1,000 in aid to those students who have exceptional financial need, and who are residents of New York State.

The Office of Financial Aids also provides these services:

1. Emergency loans for short-term educational expenses are available.
2. Part-time job leads in the community are listed in the College Union. Students are reminded of these financial aid programs which are available, but not operated by the College:
  1. Regents Scholarships are won through competitive examination in high school.
  2. Scholar Incentive awards are available to *all* full-time students who are residents of New York State.
  3. New York Higher Education Assistance loan application may be obtained at your bank, completed and submitted to the College. Students may borrow up to \$1,500 per year at 7% interest.
  4. Students with military service may apply for Veteran's Benefits. Contact your local Veterans Administration Office for information and application.
  5. Foreign students are eligible for tuition and fees waiver. Consult with the Director of Admissions.

## LIBERAL ARTS (A.A.)

### HUMANITIES AND SOCIAL SCIENCES

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

#### FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 131	English Composition .....	EN 132	Speech .....
	Social Science Elective .....		Social Science Elective .....
	Foreign Language .....		Foreign Language .....
	Mathematics or Science ....		Mathematics or Science ....
	Elective .....		Elective .....
GE 011	Seminar on College Life ...		Physical Education .....
	Physical Education .....		
	17-18		16-18

#### SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Literature Elective .....		Literature Elective .....
	Social Science Elective .....		Social Science Elective .....
	Foreign Language or Elective .....		Foreign Language or Elective .....
	Mathematics or Science ....		Mathematics or Science ....
	Elective .....		Elective .....
	15-17		15-17

All students must complete 12 semester hours of English (EN 131, 132, plus six semester hours selected from EN 231, 232, 233, 234, 235, and 237), 12 semester hours in social science courses, one year of each of the following: foreign language, mathematics, and science, and additional electives to a total of 60 semester hours. In addition, each student must complete for graduation GE 011, Seminar on College Life, and two semesters of physical education. At least 80 per cent of the credits offered in the Associate in Arts degree must be selected from the area of the liberal arts and sciences.

## LIBERAL ARTS (A.S.)

### MATHEMATICS AND SCIENCE

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

#### FIRST YEAR

##### *First Semester*

EN 131	English Composition .....	3
	*Social Science Elective .....	3
	Foreign Language .....	3
	Mathematics .....	3-4
	Science .....	3-4
GE 011	Seminar on College Life ....	1
	Physical Education .....	1
		<u>17-19</u>

##### *Second Semester*

EN 132	Speech .....	3
	*Social Science Elective .....	3
	Foreign Language .....	3
	Mathematics .....	3-4
	Science .....	3-4
	Physical Education .....	1
		<u>16-18</u>

#### SECOND YEAR

##### *First Semester*

	Mathematics .....	3-4
	Science .....	3-4
	Foreign Language or Elective .....	3
	Electives .....	6
		<u>15-17</u>

##### *Second Semester*

	Mathematics .....	4
	Science .....	3-4
	Foreign Language or Elective .....	3
	Electives .....	6
		<u>15-17</u>

All students must submit for graduation a total of 60 semester hours including 12 semester hours in the humanities (EN 131 and EN 132, and one year of a foreign language), six semester hours of social sciences, four courses in mathematics, and four courses in science. Electives should be selected to make up a unified program. In addition to the 60 semester hours, students must complete GE 011, Seminar on College Life, and two semesters of physical education. A minimum of 80 per cent of the credits submitted for graduation must be drawn from the liberal arts and science.

\*Social Science electives may be postponed until the second year.

**LIBERAL ARTS (A.S.)**

**HEALTH EDUCATION OPTION**

**FIRST YEAR**

*First Semester*

EN 131	English Composition .....	3
	Social Science .....	3
	Science or Math .....	3-4
HE 135	Personal Health .....	3
PE 201	Introduction to Health & Physical Education ....	3
GE 011	Seminar on College Life ....	1
		<u>16-17</u>

*Second Semester*

EN 132	Speech .....	3
	Social Science .....	3
	Science or Math .....	3-4
HE 136	Safety & First Aid .....	3
PE 251	Life Time Sports .....	3
		<u>15-16</u>

**SECOND YEAR**

*First Semester*

SS 291	General Psychology .....	3
BI 181	Anatomy & Physiology ....	4
	Humanities Elective .....	3
HE 235	Community Health .....	3
PE 140	Aquatic Series .....	1
		<u>14</u>

*Second Semester*

	Elective .....	3
BI 182	Anatomy & Physiology ....	4
	Humanities Elective .....	3
	Health Elective .....	3
	Physical Education .....	1
	Elective .....	3
		<u>17</u>

Sixty semester hours plus GE 011 and two semester hours of physical education are required for graduation.

Liberal Arts requirements are: EN 131, EN 132 plus six additional semester hours in humanities; SS 291, plus nine additional semester hours in social science; and BI 181, BI 182 plus six additional semester hours in science and/or mathematics.

# LIBERAL ARTS (A.S.)

## PHYSICAL EDUCATION OPTION

### FIRST YEAR

*First Semester*

EN 131	English Composition .....	3
	Social Science .....	3
	Science or Math .....	3-4
HE 135	Personal Health .....	3
PE 201	Introduction to Health & Physical Education .....	3
	Physical Education .....	1
GE 011	Seminar on College Life .....	1
		16-17

*Second Semester*

EN 132	Speech .....	3
	Social Science .....	3
	Science or Math .....	3-4
HE 136	Safety and First Aid .....	3
PE 251	Life Time Sports .....	3
PE 241	General Aquatics for P.E. majors .....	1
	Physical Education .....	1
		17-18

### SECOND YEAR

*First Semester*

SS 291	General Psychology .....	3
BI 181	Anatomy & Physiology .....	4
	Humanities Elective .....	3
PE 143	Lifesaving & Water Safety ..	1
	Elective .....	3
		14

*Second Semester*

	Elective .....	3
BI 182	Anatomy & Physiology .....	4
	Humanities Elective .....	3
PE 231	Camping .....	3
	Elective .....	3
		17

Sixty semester hours plus GE 011 (or GE 021) and two semester hours of physical education are required for graduation.

Liberal Arts requirements are: EN 131, EN 132 plus six additional semester hours in humanities; SS 291, plus nine additional semester hours in social sciences; and BI 181, BI 182 plus six additional semester hours in science and/or mathematics.

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

## ENGINEERING SCIENCE (A.S.)

Students with good academic backgrounds in science and mathematics who are interested in careers in engineering will secure through this program the basic science and mathematics preparation needed for success in the junior year. Transfer to bachelor's degree programs in chemical, civil, electrical, mechanical, and other engineering fields can be arranged for properly qualified students.

*Prerequisites:* Satisfactory completion at the high school level of one year of chemistry, one year of physics and 3½ years of mathematics. Students who lack ½ year of mathematics may be admitted with the consent of the department.

### FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 131	English Composition ..... 3	EN 132	Speech ..... 3
MA 157	Analytic Geometry and Calculus ..... 4	MA 158	Analytic Geometry and Calculus ..... 4
CH 173	College Chemistry ..... 4	CH 174	College Chemistry ..... 4
MD 171	Engineering Graphics ..... 3	MD 172	Engineering Graphics ..... 3
PH 131	Engineering Physics ..... 4	PH 132	Engineering Physics ..... 4
GE 011	Seminar on College Life .... 1		Physical Education ..... 1
	Physical Education ..... 1		
	<u>20</u>		<u>19</u>

### SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Social Science Elective ..... 3		Social Science Elective ..... 3
MA 257	Analytic Geometry and Calculus ..... 4	MA 258	Differential Equations ..... 4
PH 235	Engineering Mechanics ..... 3	PH 236	Engineering Mechanics ..... 3
PH 231	Engineering Physics ..... 4	PH 232	Engineering Physics ..... 4
	Elective ..... 3-4		Elective ..... 3-4
	<u>17-18</u>		<u>17-18</u>

## ELECTRICAL TECHNOLOGY (A.A.S.)

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

*Prerequisite:* High school algebra. Trigonometry and physics are desirable.

### FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 131	English Composition ..... 3	EN 132	Speech ..... 3
MA 151	Intermediate Algebra for Collège Students ..... 3	MA 255	Technical Mathematics ..... 4
PH 175	Physics ..... 4	PH 176	Physics ..... 4
EL 121	Electricity ..... 4	EL 122	Electricity ..... 4
EL 123	Electrical Computational Seminar ..... 1	EL 124	Electrical Computational Seminar ..... 1
GE 011	Seminar on Collège Life .... 1	MD 176	Electrical Graphics ..... 3
	Physical Education ..... 1		Physical Education ..... 1
	<u>17</u>		<u>20</u>

### SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Social Science Elective ..... 3		Social Science Elective ..... 3
MA 256	Technical Mathematics ..... 4		Elective ..... 3
EL 223	Electric Machines ..... 3	EL 224	Electric Machines ..... 3
EL 221	Electronics ..... 4	EL 222	Electronics ..... 4
EL 225	Analogue Computers ..... 2	EL 226	Digital Computers ..... 2
EL 227	Instrumentation ..... 1	EL 228	Instrumentation ..... 1
	<u>17</u>		<u>16</u>



## ACCOUNTING (A.A.S.)

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

The following is a suggested sequence of courses:

### FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
EN 131 English Composition .....	3	EN 132 Speech .....	3
BU 111 Business Mathematics .....	3	Social Science Elective .....	3
BU 121 Principles of Accounting ...	3	*Mathematics Elective .....	3-4
BU 141 Introduction to Business ....	3	BU 122 Principles of Accounting ...	3
DP 110 Introduction to Data		Elective .....	3
Processing .....	3	Physical Education .....	1
GE 011 Seminar on College Life ...	<u>1</u>		
	16		16-17

### SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
SS 181 Economics .....	3	Social Science Elective .....	3
Science Elective .....	3-4	BU 222 Intermediate Accounting ...	3
BU 221 Intermediate Accounting ...	3	BU 224 Cost Accounting .....	3
BU 271 Business Law .....	3	BU 272 Business Law .....	3
Elective .....	3	Elective .....	3
Physical Education .....	<u>1</u>		
	16-17		15

A total of 60 semester hours are required to complete the program which must include a minimum of 15 semester hours of accounting courses. A minimum of 20 semester hours from liberal arts and sciences must include EN 131; EN 132, six semester hours of social sciences; one semester of mathematics other than business mathematics; and one semester of science. In addition to the 60 semester hours, GE 011 and two semesters of physical education must also be completed by each student.

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

## BUSINESS ADMINISTRATION (A.A.S.)

The Business Administration program is designed to provide not only a broad exposure to various areas of business-related operations, but it also allows for some concentration as desired in marketing, management and related areas, data processing, accounting, or liberal arts. The selected course concentrations provide a foundation for middle management positions in the fields of insurance, 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>	
EN 131 English Composition .....	3	Social Science Elective .....	3
BU 111 Business Mathematics .....	3	*Mathematics Elective .....	3-4
BU 121 Principles of Accounting ...	3	BU 122 Principles of Accounting ...	3
BU 141 Introduction to Business ...	3	BU 142 Organization & Management Elective .....	3
DP 110 Introduction to Data Processing .....	3	Physical Education .....	1
GE 011 Seminar on College Life ....	<u>1</u>		<u>16-17</u>
	16		

### SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
SS 181 Economics .....	3	EN 132 Speech .....	3
*Science Elective .....	3-4	BU 272 Business Law .....	3
BU 271 Business Law .....	3	Social Science Elective .....	3
Electives .....	6	Electives .....	6
Physical Education .....	<u>1</u>		<u>15</u>
	16-17		

Sixty semester hours are required to complete this program which must include a minimum of 20 semester hours in liberal arts and sciences including EN 131, EN 132, six hours of social science, one semester of mathematics other than Business Mathematics, one semester of science. Electives in business may be chosen from data processing, management, marketing, and related courses. Additional electives may be chosen from liberal arts or sciences. In addition to the 60 semester hours each student must complete GE 011 and two semesters of physical education.

\*Students planning to transfer should select their mathematics, science and liberal arts courses to meet the requirements of the four-year institution which they plan to attend.

## BUSINESS DATA PROCESSING (A.A.S.)

The Data Processing program provides the basic principles and procedures which are readily applicable to the problems students will encounter in the areas of programming and systems analysis within computer installations in the business world. The following is a suggested sequence of courses:

### FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>			
EN 131	English Composition .....	3	EN 132	Speech .....	3
	Mathematics requirement ..	3		Social Science Elective .....	3
	Social Science Elective .....	3		Mathematics requirement ...	3
BU 141	Introduction to Business ....	3	BU 121	Accounting .....	3
DP 110	Introduction to Data Processing .....	3	DP 111	Computer Concepts .....	3
GE 011	Seminar on College Life ....	1		Physical Education .....	1
		16			16

### SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>			
	Mathematics requirement ..	3		Science Elective .....	3-4
BU 122	Accounting .....	3	BU 224	Cost Accounting .....	3
BU 142	Business Organization and Management .....	3		**Data Processing Electives (2) .....	6-7
DP 112	Computer Programming (BAL) .....	3		Electives .....	3-4
*DP 120	Computer Programming (FORTRAN) .....	3			15-18
	Physical Education .....	1			
		16			

A total of 60 semester hours are required to complete the program which must include a minimum of 15 semester hours of data processing courses. A minimum of 20 hours from Liberal Arts and Sciences which must include: EN 131, EN 132, six semester hours of social sciences, one semester of science, MA 160 and MA 152. (MA 151 or equivalent, is prerequisite for MA 160 and MA 152).

\*Or DP 121 Computer Programming (COBOL).

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

## SECRETARIAL SCIENCE (A.A.S.)

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

The following is a suggested sequence of courses:

### FIRST YEAR

<i>First Semester</i>	<i>Second Semester</i>
Social Science Elective ..... 3	EN 131 English Composition ..... 3
Mathematics Elective ..... 3-4	Social Science Elective ..... 3
*BU 033 Beginning Typewriting and/or	BU 132 Shorthand ..... 3
BU 134 Typewriting..... 3	BU 234 Typewriting ..... 3
BU 131 Shorthand..... 3	DP 100 Fundamentals of Data
BU 137 Business Communications . 3	Processing ..... 3
GE 011 Seminar on College Life .... 1	Physical Education ..... 1
16-17	16

### SECOND YEAR

<i>First Semester</i>	<i>Second Semester</i>
Science Elective ..... 3-4	EN 132 Speech ..... 3
BU 144 Office Machines ..... 3	BU 120 Office Accounting ..... 3
BU 231 Shorthand & Transcription 3	BU 232 Shorthand and
BU 235 Secretarial Procedures ..... 3	Transcription ..... 3
Electives ..... 3	BU 236 Secretarial Procedures ..... 3
Physical Education ..... 1	Elective ..... 3
16-17	15

Sixty semester hours are required for graduation with a minimum of 20 semester hours of liberal arts and sciences, including EN 131 and EN 132, six semester hours of social sciences, one semester of mathematics, and one semester of science. In addition to the required 60 semester hours, each student must complete GE 011, Seminar on College Life, and two semesters of physical education.

\*Depending on preparation.

## NURSING (A.A.S.)

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

*Prerequisites:* High School Biology, medical examination, evaluation of scores on standardized tests (such as R.S.E., S.A.T., S.U.A.E.). Algebra and Chemistry are strongly recommended and may become a prerequisite for admission beginning September 1973.

Satisfactory scores on a pre-admission nursing test, such as that given by the National League for Nursing or the Psychological Corporation of New York, may be required for admission beginning September 1973.

Because of the large number of applicants to the Nursing Program, it is necessary to have admission applications on file by February 1st of the year of admission.

A minimum grade of C is required in nursing courses and a passing grade in the clinical laboratory is necessary to proceed to the next sequential nursing course.

### FIRST YEAR

*First Semester*

BI 181	Anatomy & Physiology .....	4	
SS 291	General Psychology .....	3	
NU 105	Nursing Science I.....	7	
GE 011	Seminar on College Life ....	1	
	Physical Education .....	1	
		16	

*Second Semester*

EN 131	Composition .....	3	
BI 182	Anatomy & Physiology .....	4	
SS 297	Developmental Psychology .....	3	
NU 106	Nursing Science II .....	7	
	Physical Education .....	1	
		18	

### SECOND YEAR

*First Semester*

BI 282	Microbiology .....	4	
NU 205	Nursing Science III .....	9	
EN 132	Speech .....	3	
		16	

*Second Semester*

NU 206	Nursing Science IV .....	9	
SS 281	Sociology .....	3	
	Elective .....	3	
		15	

Additional Required Courses: These may be taken at any time during or preceding the two years of nursing.

EN 131	English Composition .....	3	
EN 132	Speech .....	3	
	Physical Education .....	2	
SS 281	Intro. to Sociology .....	3	
	Elective (1 course) .....	2-3	
		13-14	

A minimum of 64 credits is required for graduation.

## CERTIFICATE PROGRAMS

### SECRETARIAL STUDIES

This program is open to all students who have had two 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	3	BU 120	3
BU 137	3	BU 144	3
BU 231	3	BU 232	3
BU 235	3	Shorthand &	
DP 100	3	Transcription .....	3
Fundamentals of Data		BU 234	3
Processing .....	3	BU 236	3
GE 011	1	Secretarial Procedures .....	3
Seminar on College Life .....	1		15
	16		

### CLERK-TYPIST

This program is open to all students who have completed one-half year of typewriting in high school or its equivalent. The program leads to a Certificate as a Clerk-Typist at the end of one year. The courses listed below must be passed with a satisfactory grade with the exception of the typewriting courses which must be passed with a minimum grade of C. This program prepares for positions as clerk-typists, receptionists, and general office workers in business, industry, and government. Most courses in this program can be used to meet the requirements for an Associate in Applied Science degree.

<i>First Semester</i>		<i>Second Semester</i>	
*BU 033	3	BU 120	3
BU 134	3	BU 137	3
BU 235	3	BU 144	3
DP 100	3	BU 234	3
Fundamentals of Data		BU 236	3
Processing .....	3		15
GE 011	1		
Seminar on College Life .....	1		
Elective .....	3		
	13-16		

Electives:

English Composition	EN 131
Speech	EN 132

\*Depending on Preparation.

## GENERAL EDUCATION

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

<i>First Semester</i>	<i>Second Semester</i>
EN 010 College Preparatory English* 3	EN 010 College Preparatory English* 3
MA 050	or 011 or Speech EN 132 ..... 3
or	GE 022 Educational and Vocational
MA 150 Mathematics* ..... 3	Exploration ..... 3
GE 021 Personal Development ..... 3	GE 030 (GE 031) Improvement of
GE 030 Improvement of Reading	Reading and Study
and Study Techniques* .. 3	Techniques* ..... 3
Physical Education ..... 1	Exploratory Elective - Technical,
Exploratory Elective - Technical,	Vocational, Liberal Arts** ..... <u>2-4</u>
Vocational, Liberal Arts** ..... <u>2-4</u>	<u>9-13</u>
13-17	

\*Students may take more advanced courses with approval.

\*\*Not required for completion of certificate.

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



## BUSINESS

### ACCOUNTING

#### BU 120 Office Accounting 3 s.h.\*

Introductory course for secretarial students designed to familiarize them with the elements of accounting dealing with cash, banking, petty cash transactions, payroll procedures, simple notes and securities, and financial statements.

*Hours of class per week: 3.*

\*Not open to Accounting or Business Administration students.

#### BU 121 Accounting 3 s.h.

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

*Hours of class per week: 3.*

#### BU 122 Accounting 3 s.h.

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

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

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

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

*Prerequisite: BU 122 or permission of instructor.*

#### BU 111 Business Mathematics 3 s.h.

Review of the basic fundamentals and use of shortcut operations in computations. Instruction in the practical application of business mathematics in the areas of merchandising, insurance, banking, investment and personal finance.

*Hours of class per week: 3.*

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

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

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

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

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

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

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

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

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

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

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

*Prerequisite: BU 121 or permission of instructor.*

*Hours of class per week: 3.*

### BUSINESS ADMINISTRATION

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

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

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

**BU 141 Introduction to Business 3 s.h.**

An introductory survey of the functions and problems of business management giving the student an overview of the inter-relationship among the functional areas of business.

*Hours of class per week: 3.*

**BU 142 Business Organization and Management 3 s.h.**

A study of management problems in planning, organizing, actuating, and controlling today's business enterprises. Emphasis is placed on communicating and decision making.

*Prerequisite: BU 141 or permission of Instructor. Hours of class per week: 3.*

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

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

*Prerequisite: BU 141. Hours of class per week: 3.*

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

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

*Prerequisite: BU 142. Hours of class per week: 3.*

**BU 253 Personnel Management 3 s.h.**

An introduction to fundamentals of

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

*Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

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

An introduction to the laws applicable to business with major emphasis on contracts, agency and employment, negotiable instruments, and sale of goods. Text and case studies of legal precedents are used extensively.

*Hours of class per week: 3.*

**BU 272 Business Law 3 s.h.**

A continuation of the study of legal aspects of business covering partnerships, corporations and related business organizations, real property and leases, personal property and bailments, insurance.

*Prerequisite: BU 271 or permission of Instructor. Hours of class per week: 3.*

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

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

*Prerequisite: BU 141 with BU 122 strongly recommended. Hours of class per week: 3.*

**DP 100 Fundamentals of Data Processing 3 s.h.**

A survey of punched card systems, illustrating the need for machine processable solutions to accounting and record keeping problems, along with the concept, power, and flexibility of unit record. Unit record equipment as an independent sys-

tem is discussed and studied as well as its use and support for computers. Laboratory exercises are executed, involving setup and operation of a range of unit record equipment.

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

**DP 110 Introduction to Data Processing** 3 s.h.

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

*Hours of class per week: 3.*

**DP 111 Computer Concepts** 3 s.h.

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

*Prerequisite: DP 110, or concurrent enrollment in DP 110. Hours of class per week: 3.*

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

A course in the use of the computer to obtain standard business reports and problem solving. This course is problem oriented and utilizes Basic Assembler Language as the major programming language. Laboratory exercises are provided on the Univac 9200 II Computer.

*Prerequisite: DP 110 or concurrent enrollment in DP 110. Hours of class per week: 3.*

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

An advanced course in applying the principles of data processing to standard business applications and to mathematical problem solving. Emphasis is on advanced file organization and maintenance, and programming techniques. The course is procedure oriented and utilizes FORTRAN programming language. Laboratory exercises are provided on the Univac 9200 II Computer.

*Prerequisite: DP 111 for D.P. majors, DP 110 for non-D.P. majors. Hours of class per week: 3.*

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

An advanced course in applying the principles of data processing to standard business applications. Programming tech-

niques and file maintenance procedures through the utilization of the high-level programming language COBAL are emphasized. Laboratory exercises are provided on the Univac 9200 II Computer.

*Prerequisite: DP 111 for D.P. majors, DP 110 for non-D.P. majors. Hours of class per week: 3.*

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

A course in the utilization of data processing concepts for problem solving in standard business procedures. This course is problem oriented and utilizes Report Program Generator as the major programming language. Emphasis is on report preparation, programming procedures, file organization and maintenance, and introduction to utility programs. Laboratory exercises are provided on the Univac 9200 II Computer.

*Prerequisite: DP 111 for D.P. majors, DP 110 for non-D.P. majors. Hours of class per week: 3.*

**DP 130 Data Processing Seminar** 4 s.h.

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

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

**DP 131 Data Processing Systems** 3 s.h.

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

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

**DP 132 Computer Science** 3 s.h.

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

utilize FORTRAN IV for solving of intermediate and complex mathematical applications.

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

**BU 033 Typewriting** 3 s.h.\*

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

*Hours of class per week: 5.*

**BU 131 Shorthand** 3 s.h.

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

*Hours of class per week: 5.*

**BU 132 Shorthand** 3 s.h.

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

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

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

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

*Prerequisite: BU 033 or equivalent. Hours of class per week: 3.*

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

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

## SECRETARIAL SCIENCE

letter and the composition of various types of business communications.

*Hours of class per week: 3.*

**BU 144 Office Machines** 3 s.h.

Working knowledge of various calculating and transcribing machines found in offices is stressed.

*Hours of class per week: 3.*

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

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

*Hours of class per week: 5.*

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

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

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

**BU 231 Shorthand and Transcription** 3 s.h.

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

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

**BU 232 Shorthand and Transcription** 3 s.h.

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

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

\*Not credited toward the Associate Degree or a certificate.

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

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

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

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

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

making travel and meeting arrangements, and filing.

*Prerequisite: BU 033. Hours of class per week: 3.*

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

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

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

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

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

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

## HUMANITIES

### ENGLISH

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

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

*Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

**EN 131 Composition** 3 s.h.

This course strengthens the individual's ability to express himself in the use of the English language and to improve upon the fundamentals previously learned. The student investigates essays and in turn

\*Not credited toward the Associate degree.

investigates the methods of description, exposition, argumentation, and narration. This course gives an overall review of the mechanics of English usage and emphasis is placed on effective writing. Outside readings are required and the student submits critical analyses as an aid in helping him develop style and technique as it is evidenced in the works of representative authors.

*Hours of class per week: 3.*

**EN 132 Speech** 3 s.h.

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

*Hours of class per week: 3.*

**EN 134 Introduction to Literary Analysis** 3 s.h.

This course will introduce the student to major genres of imaginative literature, poetry, drama, the short story and the novel. He will be exposed to the standards which have traditionally been applied to these forms, and he will be given oral and written assignments which should help him to develop his own critical mentality. In addition, the student will be exposed to some of the basic concepts of film criticism and he will be encouraged to apply some of the tools of literary criticism to his analysis of film.

*Prerequisite: EN 131. Hours of class per week: 3.*

**EN 231 Masterpieces of World Literature** 3 s.h.

The course surveys world literature from the Greek and Roman classics up to, but not including, 20th Century materials. Outside readings are required to supplement the materials treated in the course. The readings include selections from Homer, Sophocles, Plato, Virgil, Dante, Chaucer, and other representative authors.

*Prerequisite: EN 131 (EN 132 desirable). Hours of class per week: 3.*

**EN 232 Masterpieces of World Literature** 3 s.h.

The course surveys world literature, beginning with a study of Melville and other representative authors. Outside readings are required to supplement the materials treated in this course.

*Prerequisite: EN 131 (EN 132 desirable). Hours of class per week: 3.*

**EN 233 American Literature** 3 s.h.

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

*Prerequisite: EN 131 (EN 132 desirable). Hours of class per week: 3.*

**EN 234 American Literature** 3 s.h.

A survey of American Literature from the middle of the Nineteenth Century to the present.

*Prerequisite: EN 131 (EN 132 desirable). Hours of class per week: 3.*

**EN 235 Modern Drama** 3 s.h.

This course is an introduction to modern drama as literature and includes a representative sample of a number of plays. Aspects of modern drama such as naturalism, expressionism, and theater of the absurd are considered as seen in the works of Ibsen, Strindberg, Chekhov, Pirandello, Lorca, Ionesco, and Albee. American playwrights include O'Neil, Miller, and Williams. Emphasis is placed on the meaning and appreciation of the plays through class discussion. Students will see a current dramatic production. A critical paper is required.

*Prerequisite: EN 131 (EN 132 desirable). Hours of class per week: 3.*

**EN 236 Introduction to Theater** 3 s.h.

The 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 dramas will be read to identify application of theatrical principles. The combination of theater art and dramatic readings will provide concepts of drama as art, audience reactions and needs, methods of expression, and interpretation. Textbooks will be used and laboratory experience will be provided.

*Hours of class per week: 3.*

**EN 237 Introductory Readings in Modern Literature** 3 s.h.

This course is an introductory approach to literature. Emphasis is placed on cultural analysis and advanced critical skills.

*Hours of class per week: 3.*

## MODERN LANGUAGES

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

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

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

### FL 341-342 French Reading and Composition 3 s.h. each semester

A review of grammar. Various types of French literature from the works of important authors; oral expression as well as composition is stressed.

*Prerequisite: FL 242. Hours of class per week: 3. Hours of lab per week: 1.*

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

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

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

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

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

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

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

In this intermediate course the comprehension and use of the spoken language are studied, as well as its grammar and composition, and the cultural aspects of the language. Reading texts are chosen to

enable the student to converse in idiomatic French and to awaken his interest in French Literature.

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

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

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

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

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

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

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

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

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

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

### FL 299 Independent Study

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

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

## ART AND MUSIC

### AR 011 College Chorus 1 s.h.\*

A chorus of men and women studying standard choral literature and participating in public concerts. Open to acceptable singers on either a credit or non-credit basis. No out-of-class assignments. Attendance is required for scheduled hours and for concert performances to be presented during the year. One credit hour per semester is not included in graduation requirements. Also open to students on a non-credit basis if they are unable to make three rehearsals per week.

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

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

*Hours of class per week: 4.*

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

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

*Hours of class per week: 3 s.h.*

### AR 102 Art History

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

*Prerequisite: None (AR 101 desirable).*

*Hours of class per week: 3.*

### AR 103 History and Literature of Music 3 s.h.

An appraisal of the art of music through directed listening with illustrations from

*\*Not counted in 60 s.h. required for the Associate Degree.*

significant composers. It enables the student to understand music from various periods of history and the relationship to social and cultural life of the period being studied. Periods to be studied include Baroque, Classic, and Romantic.

*Hours of class per week: 3.*

### AR 104 History and Literature of Music 3 s.h.

An appraisal of the art of music through directed listening with illustrations from significant composers. Reference to the Modern and Contemporary periods include the rapprochement of Jazz and serious music. Required readings.

*Hours of class per week: 3.*

### AR 105 Experiments in Live Music; A Guide to Perceptive Listening 1 s.h.

Experience live music in performances of representative works of the 17th through the 20th centuries. Demonstrations of techniques of performance relating to interpretive problems of the varied repertoire.

*Hours of class per week: 1.*

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

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

*Prerequisite: None.*

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

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

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



**HU 251 Introduction to  
Philosophy 3 s.h.**

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

**HU 254 Logic and Argument 3 s.h.**

This course presents logic as a means for analyzing social, political, and philosophical controversy. The approach is from the linguistic and semantic side, with training in finding the thread of argument within the tangles of commonplace speech and

**MA 050 Algebra 3 s.h.\***

A modern approach to introductory algebra. This course is designed to prepare students who have an insufficient mathematics background to pursue college work. Topics include: sets and number systems; operations; exponents; polynomials and rational expressions; first degree equations; functions and graphs; verbal problems.  
*Hours of class per week: 4.*

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

A course for the non-science oriented student, emphasizing the nature of mathematics and the development of mathematical ideas and concepts. Topics include: numeration systems; sets; elementary logic and deductive reasoning; abstract systems; and the natural, integer, and rational number systems. Not open to students having two years of high school algebra or MA 151.  
*Hours of class per week: 3.*

**MA 151 Intermediate Algebra  
for College Students 3 s.h.**

This course is designed for students who have had only a minimum of high school mathematics and who wish to later enroll

\*Not credited toward the Associate Degree.

writing. Interest in language is important. This course covers most of the traditional logic of philosophy, such as the syllogism and the use of reasoning in the development of new knowledge, as well as the elements of critical thinking.

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

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

This is a survey course of the living religions of our day. Comparison is made of their similarities and differences. Emphasis is placed upon the influence of religion upon government.

*Hours of class per week: 3.*

## MATHEMATICS

in any of the following: MA 152, 154, 159, 160, 255. Topics include: properties of real numbers; polynomials and rational expressions; equations and inequalities; exponents, roots and radicals; functions and graphs; simultaneous systems; logarithms; right triangle trigonometry.

*Prerequisite: MA 050 or one year of high school algebra. Hours of class per week: 3.*

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

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

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

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

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

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

Mrs. Spaulding



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

First course in a sequence of four courses covering topics from the calculus, analytic geometry, differential equations and advanced areas. Topics include: inequalities, introductory analytic geometry, functions, limits, continuity, the derivative, differentiation of algebraic functions, applications of the derivative, anti-differentiation.

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

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

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

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

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

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

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

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

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

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

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

A sequel to MA 150, this course includes study of some of the same topics in greater depth, as well as topics selected from the following: Geometries; Relations, Functions and Graphs; Axiomatics

and Proof; Introductory Probability; Measurement and Mensuration; History of Mathematics; Number Theory and Finite Systems.

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

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

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

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

**MA 255 Technical Mathematics** 4 s.h.

Review of analytic geometry of the straight line and conic sections; differentiation of algebraic functions; logarithmic and trigonometric differentiation; curve sketching, maxima and minima; time rates, implicit functions; anti-differentiation; applications.

*Prerequisite:* MA 151. Hours of class per week: 4.

**MA 256 Technical Mathematics** 4 s.h.

A continuation of MA 255. The definite integral; integration techniques; areas volumes; moments of inertia; areas of surfaces of revolution; curve acceleration; applications.

*Prerequisite:* MA 255. Hours of class per week: 4.

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

Topics include: polars, conic sections; Vectors in  $E_2$  and  $E_3$ , hyperbolics; indeterminate forms, infinite series; Taylor's Series with Remainder; introductory calculus of several variables, partial differentiation and multiple integration; applications.

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

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

Topics include: Definitions, Differential equations of first degree and order, Applications, Bernoulli's equation, Linear independence. General solutions to homogeneous and non-homogeneous equations, differential operators, auxiliary equations, the Laplace transform and its inverse, sys-

tems of equations. (Spring semester only.)

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

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

This course is designed for second year mathematics or science students.

Topics covered: Systems of linear equations, vector spaces, linear dependence, bases, dimension, linear transformations, matrices determinants, and eigenvectors. (Spring semester only.)

*Prerequisite: MA 158 (concurrent regis-*

*tration in MA 257 or MA 258 is recommended). Hours of class per week (A)*

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

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

## SCIENCE AND ENGINEERING

### BIOLOGY

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

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

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

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

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

emphasis will be placed on basic concepts of population genetics and evolution.

*Prerequisite: Biology 171. Hours of class per week: 3. Hours of lab per week: 3.*

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

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

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

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

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

Topics to be surveyed will include:

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

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

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

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

An intensive field program stressing terrestrial and aquatic ecology. The course will outline the interrelationship between the biotic community and its physical environment. Where pertinent, the effect of pollution on this relationship will be stressed. Topics to be covered will include:

\*The scope of ecology \*The eco-system  
\*Sampling techniques and statistical analysis of sampling data \*Microclimatology effects \*Use and development of identification keys \*Phytosociological analysis of Terrestrial Vegetation \*Terrestrial energy cycles (food chains and food webs) \*Plant and animal succession \*Human energy production as a process in the biosphere \*The morphometry and morphology of lakes and streams \*Properties of water \*Hydrologic cycles of lakes

and streams \*Oxygen concentration in lakes and streams and its effect on the biotic community \*Mineral cycles of lakes and streams \*The hydromechanics of plankton \*Energy cycles of lakes and streams (typical).

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

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

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

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

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

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

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

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

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

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

## **CHEMISTRY**

#### **CH 173-174 Fundamentals of Chemistry**

4 s.h. each semester

A course in the fundamentals of chemistry stressing basic principles. Topics included are chemical bonding, periodicity,

state of matter, solutions, atomic theory, and kinetic theory. Laboratory work involves classical experiments and open-ended problem solving situations.

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

## ELECTRICITY AND ELECTRONICS

### EL 121 Electricity 4 s.h.

This first course in the Electrical Technology curriculum investigates the concepts of current, voltage, and power as applied to D.C. network analysis. The nature of resistance, inductance, and capacitance is also studied. The fundamental laws of electric circuits and the nature of magnetic circuits are also covered.

*Prerequisite: High school algebra. Hours of class per week: 3. Hours of lab per week: 3.*

### EL 122 Electricity 4 s.h.

EL 122 is a continuation of EL 121 to which a study of A.C. circuits is incorporated. Topics covered include impedance, reactance, resonance, voltamperes, power, and vector diagrams for both single phase and three phase systems. Special attention is directed toward mesh current analysis and application of basic network theorems. The transformer is introduced and application of non-sinusoidal excitation is studied briefly.

*Prerequisites: EL 121. Hours of class per week: 3. Hours of lab per week: 3.*

### EL 123 Electrical Computational Seminar 1 s.h.

Development of fundamental skills needed to study courses of a technical nature. Topics to be covered will include physical quantities and definitions; numerical symbols and operations; computation with power of ten notation; slide rule computation; solving algebraic equations; introduction to ratio and proportion; measurements of physical quantities.

*Hours of class per week: 1.*

### EL 124 Electrical Computational Seminar 1 s.h.

This course furthers the development of fundamental skills needed to study courses of a technical nature as a continuation of EL 123. Topics covered include experimental data, graphical analysis of experimental data, a scientific experiment, reading technical materials, solving technical problems, sources of technical information.

*Prerequisite: EL 123. Hours of class per week: 1.*

### EL 221 Electronics 4 s.h.

This course introduces the student to electronics through the study of the basic behavior of vacuum tube and semi-conductor devices, including vacuum diodes, triodes, tetrodes, pentodes, and semi-conductor diodes, transistors, varactors, thyristors, SCR's and Triacs. The characteristics of these circuit elements are explored by the investigation of graphical techniques and introductory mathematical analysis as applied to basic power supplies, filters, regulators, and fundamental amplifier configurations.

*Prerequisite: EL 122. Hours of class per week: 3. Hours of lab per week: 3.*

### EL 222 Electronics 4 s.h.

EL 222 develops the study of electronics by the investigation of vacuum tube and semi-conductor electronics as a continuation of EL 221. During the course, the characteristics and design limitations of basic circuits including bias stabilization, coupling, and feedback applications are investigated. This course includes voltage and power amplifiers, oscillators, and wave shaping circuits with primary emphasis directed toward semi-conductor devices. The basics of electronic communication is introduced and the topics of power control and light sensitive devices are surveyed.

*Prerequisite: EL 221. Hours of class per week: 3. Hours of lab per week: 3.*

### EL 223 Electric Machines 3 s.h.

Electric Machines 223 is concerned with the operation, construction, and characteristics of rotating machinery, including the winding geometry, armature reaction, starting methods, speed control, ratings, and operational characteristics for both motors and generators. The topics of speed control, efficiency, rotary amplifiers are also investigated. The testing, rating, connection of both current and voltage transformers, and their vector diagrams are also studied as applicable to single phase and three phase usage. Vector diagrams, short circuit tests and open circuit test, autotransformers, and efficiencies are included.

*Prerequisite: EL 121. Hours of class per week: 2. Hours of lab per week: 2.*

**EL 224 Electric Machines** 3 s.h.

This course in electric machines is an extension of EL 223 dealing with the study of polyphase motors and generators including induction motors, synchronous motors, and industrial control applications of electric machines. Methods of speed control and characteristics of single phase motors are stressed. The application of these devices to the system is introduced by a brief study of control system parameters and their characteristics.

*Prerequisite: EL 223. Hours of class per week: 2. Hours of lab per week: 2.*

**EL 225 Analogue Computers** 2 s.h.

Modern computing systems are approached through a survey of their evolutionary development and their basic elements. Operational principles of electronic computing devices and circuits capable of performing arithmetic operations and function generation are investigated in detail. Use of these devices is presented in the actual programming and use of analogue computing systems, including amplitude and time scaling as applicable to solution of simultaneous algebraic and time dependent equations.

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

**EL 226 Digital Computers** 2 s.h.

This course is a study of digital computer systems as related to an investigation of

applicable number systems and related arithmetic operations, Boolean algebra, and the characteristics of digital signals. Study of circuitry and operational units includes magnetic devices, counters, adders, registers, logic circuitry, memory systems, input and output sections, and computer control with a brief mention of programming.

*Prerequisite: PH 176 and concurrent registration in EL 222.*

**EL 227 Instrumentation** 1 s.h.

Instrumentation EL 227 provides the electrical student with an appreciation for the operational principles of various measurement and laboratory devices. Study of the oscilloscope, error propagation due to uncertainties, resistor coding, meter movements, and construction of the VOM and VTVM is included.

*Prerequisite: EL 122 and PH 176. Hours of lab per week: 2.*

**EL 228 Instrumentation** 1 s.h.

This course is a continuation of EL 227 and concerned with the study of A.C. and D.C. bridge circuits, the operation of basic electrical sensors, and the study of various types of tube and transistor testing instruments. Other topics covered include test methods applicable to audio and radio frequency circuits.

*Prerequisite: EL 227. Hours of lab per week: 2.*

## GEOLOGY

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

The first geology course for the potential geology or related science major. Topics include basic mineralogy and crystallography, rocks, weathering and soil formation, erosion, glaciation, basic geomorphology, maps, surface and ground water, introduction to geologic structures and related topics. Field work, laboratory work and independent study or research is incorporated into the course.

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

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

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

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

## GRAPHICS

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

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

*Hours of class per week: 3.*

### MD 172 Engineering Graphics 3 s.h.

Course covers development, detail and assembly drawings, screw thread work, production, dimensioning, charts and graphs, and gearing.

*Prerequisite: MD 171. Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

## NURSING

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

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

*Prerequisites: Completion of, or concurrent registration in BI 181, SS 291. Hours of class per week: 5 including 1 hour seminar. Hours of lab per week: 6.*

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

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

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

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

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

*Prerequisites: NU 206. Hours of class per week: 6 plus 1 hour seminar (total 6). Hours of lab per week: 10.*

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

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

*Prerequisites: NU 106, completion of, or concurrent registration in BI 282, SS 281. Hours of class per week: 5. Hours of lab per week: 10-12.*

### PH 131-132 Physics 4 s.h. each semester

A comprehensive course stressing the fundamentals of physics, designed for biology, chemistry, engineering, mathematics, and physics majors. First semester

stresses the fundamentals of mechanics, heat and thermodynamics. Second semester includes the study of electricity and magnetism, sound and optics, atomic and nuclear physics.

## PHYSICS

*Prerequisites: High school physics or PH 175-176, high school mathematics through trigonometry, and concurrent registration in MA 157-158. Hours of class per week: 3. Hours of lab per week: 3.*

**PH 175 Physics 4 s.h.**

The fundamental concepts of measurements, quantum mechanical model of atoms and molecules, velocity and acceleration, force and motion, momentum and collisions, work, power and energy, sound and wave motion are introduced and developed. Use of the slide rule is also taught.

*Prerequisite: High School Algebra. Hours of class per week: 3. Hours of lab per week: 3.*

**PH 176 Physics 4 s.h.**

Temperature, heat and thermodynamics, electrostatics, direct current, magnetic fields and forces, alternating current, geometrical optics, interferences and diffraction, and modern physics are covered.

*Prerequisite: PH 175. Hours of class per week: 3. Hours of lab per week: 3.*

**PH 231 Electromagnetic Theory 4 s.h.**

An intensive course in electricity, magnetism, and electromagnetic waves. Topics studied include: electrostatics, field strength and potential, capacitors and dielectrics, current and resistance, Ohm's law, analysis of DC circuits, Kirchhoff's rules, moving charges and magnetic fields, Ampere's law, electromagnetic induction, alternating currents, electric and magnetic properties of matter, Maxwell's equations and solutions, characteristics of AC circuits, cavity resonators and wave-guides, and properties of electromagnetic waves.

*Prerequisite: PH 131-132 and concurrent registration in MA 257. Hours of class per week: 3. Hours of lab per week: 3.*

**PH 232 Modern Physics 4 s.h.**

The course introduces the student to the fundamentals of quantum physics

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

The human relevance and social implications of biology. The origin, evolution,

as applied to radiation, nuclei, atoms, molecules, and solids. Topics covered include: the dual nature of matter and radiation, photoelectric effect, Compton effect, X-rays, pair production and annihilation, de Broglie waves, electron diffraction, uncertainty principle, Bohr model of the atom, Schrödinger theory, nuclear structure, radioactivity, nuclear fission and fusion, quantum statistics, masers and lasers, molecular binding, and the band theory of solids.

*Prerequisites: PH 131-132 and concurrent registration in MA 258. Hours of class per week: 3. Hours of lab per week: 3.*

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

This course presents the principles of statics of particles and rigid bodies and indicate the general methods of applying them to the solution of varied engineering problems and develop that analytical capability so essential for engineers. Topics covered are: vector algebra, forces and equilibrium, structures, plane and space trusses, frames and machines, centroids of lines, areas and volumes, flexible cables, beams with distributed loads, friction, area moments of inertia and mass moments of inertia, inertia tensor.

*Prerequisites: PH 131-132 and concurrent registration in MA 257. Hours of class per week: 3.*

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

This course presents the principles of dynamics of particles and rigid bodies and indicate the general methods of applying them to the solution of varied engineering problems. Topics covered are: equations of motion, rectilinear and curvilinear motion, motion relative to translating and rotating axes, work and energy, impulse and momentum. Euler equations, the gyroscope, central force motion, simple harmonic motion, damped oscillations and forced oscillations.

*Prerequisite: PH 235. Hours of class per week: 3.*

## SCIENCE

and nature of living systems. Cellular anatomy, physiology, and energetics discussed in genetic and ecological perspec-



tive. Observation, interpretation, and library research are integrated by means of written laboratory reports. Laboratory study of behavior of living organisms, microscopy of selected native flora and fauna, elemental experiments in biochemistry, biophysics and genetics are included.

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

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

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

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

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

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

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

local field trips. For non-science majors.

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

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

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

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

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

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

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

## SOCIAL SCIENCES

### ECONOMICS

**SS 181 Micro-economic Analysis 3 s.h.**

The course analyzes cost and demand functions; economic factors involved in pricing practices and profit maximization, and patterns of competition. Additionally, the course analyzes income distribution and the problem of poverty.

*Hours of class per week: 3.*

**SS 182 Macro-economic Analysis 3 s.h.**

The course analyzes and explains the economy with emphasis on the important parts and their relationship to monetary and fiscal policies, including stabilization.

*Hours of class per week: 3.*

## HISTORY

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

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 3 s.h.

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

*Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

### SS 263 Ancient Civilization 3 s.h.

A study of the history and significance of the major civilizations of the ancient world from ca. 1000 B.C. until the end of the Roman Empire in the West.

*Prerequisite: 6 hours of Social Sciences or permission of the instructor. Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

### SS 185 Introduction to Politics 3 s.h.

This course examines the essentials of the scientific study of politics. The emphasis will not be on any particular political system, but on the components of

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

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

*Hours of class per week: 3.*

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

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

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

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

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

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

### SS 289-290 Independent Study of Contemporary Issues 3 s.h.

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

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

## POLITICAL SCIENCE

politics. The major focus will be an examination of the relationship between elites and masses. The discussions will be drawn from various political systems: the U.S., The U.S.S.R., West Germany, France,

Great Britain, Yugoslavia, and the fundamentally agrarian societies of Africa and Asia.

*Hours of class per week: 3.*

**SS 287 International Organizations 3 s.h.**

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

**SS 291 General Psychology 3 s.h.**

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

*Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

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

An attempt to explore our rapidly changing society through the sociological analysis of significant social problems including juvenile delinquency, adult crime, organized gambling, alcoholism, drug addic-

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

**SS 282 American Political System 3 s.h.**

The objective of this course is to describe, analyze, and explain the American Political System as it actually is. The approach will be primarily behavioral and not institutional. The fundamental question of this course will be "Who Gets What, When, How" in American politics? Although the emphasis will be on politics at the national level, the course will pay particular attention to some intergovernmental relations as they specifically effect the crises of state and metropolitan governments.

*Hours of class per week: 3.*

## PSYCHOLOGY

**SS 297 Developmental Psychology 3 s.h.**

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

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

## SOCIOLOGY

tion, personality disorders, suicide, marital problems, and discrimination. The course will attempt to introduce theory and methods for studying social problems and techniques for understanding and coping with these problems.

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

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

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

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

# HEALTH, PHYSICAL EDUCATION, AND RECREATION

Two semesters of Physical Education are required for the Associate Degree.

## HE 135 Personal Health 3 s.h.

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

Hours of class per week: 3.

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

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

Hours of class per week: 3.

## HE 235 Community Health 3 s.h.

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

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

Hours of class per week: 3.

## PE 031 Intramural Sports

A student may elect two sports in the intramural leagues. Leagues are conducted in Flagg football, volleyball, basketball, bowling, badminton and softball. Individuals or teams may sign up at the Physical Education Office.

Prerequisite: Satisfactory medical exam.

## PE 131 Physical Education 1 s.h.\*

A variety of lifetime sports will be scheduled based on the needs and interests of the student and the facilities available.

Activities include golf, bowling, volleyball, weight training, archery, paddleball, and handball.

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

## PE 132 Physical Education 1 s.h.\*

Badminton, tennis, archery, softball, weight training, gymnastics, and tumbling are covered in a continuation of the lifetime sports series. Methods of achieving and maintaining fitness are stressed with emphasis on circuit training.

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

## PE 141 Basic Swimming 1 s.h.\*

This course is designed for students who are either non-swimmers or marginal swimmers as determined by preliminary screening. It becomes a required course in lieu of PE 132 when a student cannot meet the criteria established for certification as a swimmer by the Physical Education department. The course objective is to have the student acquire enough basic knowledge and skill to effectively protect themselves and assist others, when in the proximity of water, under conditions of danger and stress. This course will be offered on a non-co-ed and co-ed basis (student option).

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

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

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

\*2 Semesters in physical education required for the Associate degree beyond the necessary 60 semester hours.

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

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

**PE 144 Skin and Scuba Diving 1 s.h.\***

This highly specialized course is being offered to meet the ever increasing needs and demands of men and women to live and explore beneath the lakes, rivers, and oceans of the world. Upon successful completion of this course an aquanaut, or aquanet, will have the ways and means to use their newly acquired knowledge and skill to perform underwater: explorations, photography, studies in marine biology, oceanography, archaeology, salvage and rescue operations.

This course will be open to those who pass the basic swimming screening test and who can:

1. Tread water, feet only (3 minutes);
2. Swim 300 yards (without stopping);
3. Tow an inert swimmer 40 yards;
4. Stay afloat 15 minutes without accessories or help;
5. Swim 15 yards underwater without a push off. NOTE: Fins may not be used in any of these tests.

*Prerequisites: Satisfactorily pass the aquatic screening test and satisfactory*

*\*2 Semesters in physical education required for the Associate degree beyond the necessary 60 semester hours.*

**GE 011 Seminar on College Life 1 s.h.\***

A seminar which focuses on the concerns of the entering student and assists him in effectively dealing with these concerns. The group discussion technique will be utilized to explore questions identified by the class members as being of significant interest to them.

*Required for the Associate Degree, but GE 021 may be substituted. Hours of class per week: 1.*

*medical examination. Hours of class per week: 2.*

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

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

*Hours of class per week: 3.*

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

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

*Hours of class per week: 3.*

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

All future physical educators taking this required course will learn all the latest techniques necessary in the performance of skills associated with the American Red Cross program for beginner, advanced beginner, intermediate, and advanced swimming.

*Hours of class per week: 2.*

**PE 251 Lifetime Sports 3 s.h.**

Philosophy and instructional techniques in a variety of the lifetime sports. Activities include: archery, golf, badminton, tennis, paddleball, bowling, volleyball, etc.

*Hours of class per week: 3.*

## GENERAL EDUCATION

**GE 021 Personal Development 3 s.h.\***

A seminar designed to promote individual self-awareness and self-understanding through group discussion. Rather than receiving formal instruction in an academic discipline, students are encouraged to explore informally a wide range of topics which are of immediate personal interest to them.

*Admission only by permission of the instructor. May be substituted for GE*

011, Seminar on College Life. Hours of class per week: 3.

**GE 022 Educational and Vocational Exploration 3 s.h.\***

A seminar designed to aid students in formulating educational and vocational goals.

Group discussion includes in depth examination of various occupations and professions in terms of: educational requirements, job demands and satisfactory advancement potential, financial rewards, and other aspects of employment.

*Admission only by permission of the instructor. Hours of class per week: 3.*

**GE 030 Improvement of Reading and Learning Skills 3 s.h.\***

This is a basic or fundamentals course designed to assist the student in developing his reading and learning skills to the level of achievement necessary for college

work. The course provides specific practice required to maintain these skills at a high level. Improvement will be sought in six areas of reading: vocabulary, comprehension, rate, critical reading, learning skills, and fluency.

*Hours of class per week: 3.*

**GE 031 Improvement of Reading and Learning Skills 3 s.h.\***

A continuation of GE 030 for those students who feel the need for further instruction in the area of reading and learning skills. Improvement will be sought in six areas: vocabulary, comprehension, rate, critical reading, learning skills, and fluency. An investigation of various forms of written material and the reading method that is employed in dealing with materials is being conducted.

*Hours of class per week: 3.*

\*Not credited toward the Associate Degree.