State University of New York

The State University of New York, established by the State Legislature in 1948, comprises 70 colleges and centers. At present, 69 conduct classes: four University Centers, two Medical Centers, 13 Colleges of Arts and Sciences, two Specialized Colleges, six two-year Agricultural and Technical Colleges, five Statutory Colleges, and 36 locally-sponsored, two-year Community Colleges.

Permanent campuses for two new Colleges of Arts and Science are under construction, the College at Purchase in Westchester County and the College at Old Westbury in Nassau County. Old Westbury conducts classes on a limited enrollment basis in temporary quarters at Oyster Bay, Long Island. Special credit programs are conducted by Purchase, including joint operation of a Cooperative College Center in Mount Vernon. The thirteenth Arts and Science campus, upper-divisional in concept, serves the Herkimer-Rome-Utica area. Construction of its permanent campus in Oneida County is scheduled to begin in 1972. Evening and summer courses are being offered in temporary facilities in the West Frankfort Elementary School.

In New York City, the eighth community college sponsored by the Board of Higher Education, Hostos Community College, opened its doors at 475 Grand Concourse in September 1970. The ninth, to be located in the Long Island City area of Queens, has a target opening date of September 1971.

Upstate, three community colleges admitted their first classes in September of 1969. They are Schenectady County Community College, Clinton Community College, and Columbia-Greene Community College.

The University further comprises the Ranger School, a division of the College of Forestry, which offers a 43-week technical forestry program at Wanakena; the Center for International Studies and World Affairs at Albany; and five Urban Centers administered by Community Colleges.

University-wide research programs include the Atmospheric Sciences Research Center with campus headquarters at Albany, the Institute for Theoretical Physics and the Marine Sciences Research Center at Stony Brook, and the Water Resources and Polymer Research Centers at the College of Forestry. Two research facilities headquartered at State University of New York at Buffalo are the Western New York Nuclear Research Center and the Center for Immunology.

Graduate study at the doctoral level is offered by State University at 12 of its campuses, and graduate work at the master's level at 22. The University is continuing to broaden and expand over-all opportunities for advanced degree study.

Graduate study areas embrace a wide spectrum including agriculture, business administration, criminal justice, dentistry, education, engineering, forestry, law, liberal arts and science, library science, medicine, nursing, pharmacy, social work, and veterinary medicine.

Four-year programs strongly emphasize the liberal arts and science and also include specializations in teacher education, business, forestry, maritime service, ceramics, and the fine and performing arts.

Two-year programs include nursing and liberal arts transfer programs and a wide variety of technical curriculums such as agriculture, business, and the industrial and medical technologies. The University's Urban Centers provide training for skilled and semi-skilled occupations and college foundation courses for youths in the inner city areas.

Governed by a Board of Trustees appointed by the Governor, State University of New York comprises all State-supported institutions of higher education, with the exceptions of the senior colleges of City University of New York. Each college and center of State University is locally administered. Although separated geographically, all are united in the purpose of broadening and extending numerous opportunities to the youth of New York State.

The State University motto is: "Let Each Become All He Is Capable of Being."
This catalog is up-to-date as of March 1, 1971. The College reserves the right to make changes in policy and regulations, as circumstances dictate, subsequent to publication. The College expects each student to have knowledge of the information presented in this catalog and in other College publications.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>State University of New York</td>
<td></td>
</tr>
<tr>
<td>Map of Campus</td>
<td>2</td>
</tr>
<tr>
<td>The Calendar</td>
<td>4</td>
</tr>
<tr>
<td>General Information</td>
<td>5</td>
</tr>
<tr>
<td>Entrance Requirements and Related Information</td>
<td>11</td>
</tr>
<tr>
<td>Finances and Financial Aid</td>
<td>17</td>
</tr>
<tr>
<td>Academic Information</td>
<td>23</td>
</tr>
<tr>
<td>The Campus Community</td>
<td>27</td>
</tr>
<tr>
<td>Student Activities</td>
<td>30</td>
</tr>
<tr>
<td>Elective Courses</td>
<td>34</td>
</tr>
<tr>
<td>State University Trustees and Administration</td>
<td>179</td>
</tr>
<tr>
<td>Agricultural and Technical College at Farmingdale College Council</td>
<td>179</td>
</tr>
<tr>
<td>Administration and Faculty</td>
<td>180</td>
</tr>
<tr>
<td>Advisory Committees</td>
<td>197</td>
</tr>
</tbody>
</table>

## PROGRAMS

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising Art and Design</td>
<td>36</td>
</tr>
<tr>
<td>Agriculture</td>
<td>46</td>
</tr>
<tr>
<td>Agronomy</td>
<td>48</td>
</tr>
<tr>
<td>Animal Science</td>
<td>49</td>
</tr>
<tr>
<td>Poultry Science</td>
<td></td>
</tr>
<tr>
<td>Aerospace Technology</td>
<td>40</td>
</tr>
<tr>
<td>Aerospace Service Aide</td>
<td>43</td>
</tr>
<tr>
<td>Air Conditioning Technology</td>
<td>54</td>
</tr>
<tr>
<td>Audio Visual Communications</td>
<td>57</td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>59</td>
</tr>
<tr>
<td>Biological Technology</td>
<td>62</td>
</tr>
<tr>
<td>Biological Research</td>
<td>63</td>
</tr>
<tr>
<td>Biological Oceanology</td>
<td>65</td>
</tr>
<tr>
<td>Pest Control Technology</td>
<td>64</td>
</tr>
<tr>
<td>Laboratory Animal Research Technology</td>
<td>65</td>
</tr>
<tr>
<td>Business Administration</td>
<td>70</td>
</tr>
<tr>
<td>Chemical Technology</td>
<td>75</td>
</tr>
<tr>
<td>Civil Technology-Highway</td>
<td>79</td>
</tr>
<tr>
<td>Community Service Assistant</td>
<td>85</td>
</tr>
<tr>
<td>Construction Technology-Building</td>
<td>80</td>
</tr>
<tr>
<td>Data Processing</td>
<td>89</td>
</tr>
<tr>
<td>Dental Hygiene</td>
<td>93</td>
</tr>
<tr>
<td>Electrical Technology-Electronics</td>
<td>96</td>
</tr>
<tr>
<td>Electro-Mechanical Technology</td>
<td>99</td>
</tr>
<tr>
<td>Engineering Science</td>
<td>103</td>
</tr>
<tr>
<td>English</td>
<td>106</td>
</tr>
<tr>
<td>Food Processing Technology</td>
<td>109</td>
</tr>
<tr>
<td>Foreign Languages</td>
<td>113</td>
</tr>
<tr>
<td>Graphic Arts and Advertising Technology</td>
<td>115</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>119</td>
</tr>
<tr>
<td>Mathematics</td>
<td>121</td>
</tr>
<tr>
<td>Mechanical Technology</td>
<td>123</td>
</tr>
<tr>
<td>Medical Laboratory Technology</td>
<td>127</td>
</tr>
<tr>
<td>Mortuary Science</td>
<td>130</td>
</tr>
<tr>
<td>Nursery Education</td>
<td>132</td>
</tr>
<tr>
<td>Nursing</td>
<td>136</td>
</tr>
<tr>
<td>Ornamental Horticulture</td>
<td>139</td>
</tr>
<tr>
<td>Floriculture</td>
<td>140</td>
</tr>
<tr>
<td>Landscape Development</td>
<td>142</td>
</tr>
<tr>
<td>Nursing Management</td>
<td>141</td>
</tr>
<tr>
<td>Turfgrass Management</td>
<td>143</td>
</tr>
<tr>
<td>Photographic Technology</td>
<td>151</td>
</tr>
<tr>
<td>Physical Education</td>
<td>155</td>
</tr>
<tr>
<td>Physics</td>
<td>157</td>
</tr>
<tr>
<td>Police Science</td>
<td>158</td>
</tr>
<tr>
<td>Correctional Administration</td>
<td>159</td>
</tr>
<tr>
<td>Recreational Supervision</td>
<td>162</td>
</tr>
<tr>
<td>Secretarial Science-Advertising</td>
<td>165</td>
</tr>
<tr>
<td>Executive, Legal, Medical</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>169</td>
</tr>
<tr>
<td>Preparatory Programs</td>
<td>174</td>
</tr>
<tr>
<td>Certificate Programs</td>
<td>206</td>
</tr>
</tbody>
</table>

Cover design by Ronald Hill, Evening College Advertising Art and Design student.
CALENDAR

FALL SEMESTER 1971

SEPTEMBER  9, 10, 13, 14  Registration
           15  Classes Begin
           20  Holiday
           29  Holiday

NOVEMBER   5  Mid-Semester Deficiency Reports
            24-28  Holiday

DECEMBER   20 - January 2  Holiday

JANUARY    14  Classes End
            17-19  Final Examinations
            21  Final Grades Due

SPRING SEMESTER 1972

JANUARY    31 - February 3  Registration

FEBRUARY   4  Classes Begin
            11  Holiday (Tentative)
            14  Holiday (Tentative)

MARCH      24  Mid-Semester Deficiency Reports
            29 - April 9  Holiday

MAY        4-6  Open House
            26  Classes End
            29  Holiday
            30 - June 1  Final Examinations

JUNE       5  Final Grades Due
            6  Commencement
GENERAL INFORMATION

College History

The State University College at Farmingdale was established by the New York State Legislature in 1912 and was originally known as the New York State School of Agriculture. It was later known as the State Institute of Applied Agriculture and subsequently as the State Institute of Agriculture, and still later as the Long Island Agricultural and Technical Institute. The present name—State University Agricultural and Technical College at Farmingdale—was determined by the Board of Trustees of the State University of New York in December, 1964. Geographically, the college is ideally located to serve the Long Island community. Although the majority of students commute, housing for nearly 1300 students is provided in several college dormitories.

Initially, the college offered a four-year agricultural program. In the decade following its founding, additional courses and programs were added in agriculture and ornamental horticulture. In 1920, the regular four-year offering was limited to a three-year program and in 1935 and 1936, the curriculum was reduced to two years.

The increasing need for technically trained men and women during World War II and during the post-war period required the addition of industrial-technical programs. These were added in 1946. To accommodate the new curriculums a building in the village of Farmingdale was leased.

In 1948 the college became a unit of the newly-established State University of New York. This also was the year that the Evening and Extension Division was formed. Three years later all curriculums were approved for the granting of the Associate in Applied Science degree.

Accreditation by the Middle States Association of Colleges and Secondary Schools was achieved in 1952, which was the year that the Industrial-Technical Division was moved to the main campus. In addition to the Middle States accreditation, the college’s Dental Hygiene program is accredited by the American Dental Association, the Aircraft Operations Technology program is approved by the Federal Aviation Agency, and the Engineers’ Council for Professional Development has accredited many of the engineering technology programs.

At the present time the College enrolls over 5,000 full time and 7,000 part-time students.
Objectives of the College:

1. To provide opportunities for personal development;
   a. That will assist students to think clearly, to communicate effectively; and to assimilate, analyze and synthesize knowledge for the solution of individual and group problems.
   b. That will stimulate student interest and participation in appropriate physical, cultural, and social activities.

2. To prescribe standards for productive employment;
   a. That are both theoretical and practical so that students may become proficient in and knowledgeable about their chosen fields of activity.
   b. That are designed to develop attitudes and ethics so that students will acquire the personal qualities essential to successful employment.

3. To prepare students for participation in a democratic society;
   a. By employing democratic processes, in curricular and extra-curricular activities so that students will learn to participate efficiently in group decisions and actions.
   b. By fostering insights into aspects of college, community, state, national, and international problems, so that students will understand the various levels, characteristics, and types of government.

The College is authorized to offer two-year programs of study beyond the high school level which will qualify students for direct placement in various technical and related fields. Subject to this authorization, the College subscribes to the following objectives:

1. To aid the student in developing abilities and competence in his technical field. To accomplish this end each curriculum offers sound theoretical instruction along with actual experience in practical phases of the work. In addition, the College endeavors to induce its students to develop attitudes and ethics which make for optimum on-the-job relationships in each occupation.

2. Since there is more to living a life than earning a living, the College endeavors to assist each student in developing his potentialities so as to live a happy, healthy, responsible, and productive life. Thus the College provides opportunities for students to learn to think clearly; to communicate effectively; to understand and appreciate their cultural and intellectual heritages; to be responsible members of families, of local communities, of national and world societies, and of any other groups of which they are part.

3. To serve business, industries, professions and units of government by providing competent personnel in technical and related fields. The College faculty keeps abreast of the changing needs in our technological society by continuing educational experiences among which are professional improvement through graduate study, meetings with other professional groups, visits to business enterprises, consultations with advisory groups, and periodic surveys of our graduates.
4. *To serve society* by stimulating students to develop their respective capacities for participating in and contributing to the democratic way of life; by making them mindful of the fact that all future generations are dependent upon the world's natural resources that are now entrusted to our common stewardship; by encouraging them to exercise restraint, consideration, and justice in individual and group relations with their fellow men throughout the world; and by helping them to understand that only by making a contribution to the future can a person or a generation pay its debt to the past.

**The Curriculum**

The College offers two-year day programs for high school graduates who wish to prepare for careers in engineering technologies, business, health services, recreation supervision, community services, police science, agriculture, and ornamental horticulture and one-year diploma programs. Typical employment opportunities are suggested in the curriculum descriptions in a later section of this catalog. The curriculum in Engineering Science prepares for future study at a college of engineering with full transfer credit.

Each academic year consists of two semesters. Courses in English, social science and either mathematics or the natural sciences or both are required for all students. During the second year advanced courses provide for concentration in underlying theory and applied science appropriate to the field of specialized, reinforced by suitable laboratory experiences.

The College reserves the right to cancel any course or curriculum option where enrollment does not warrant the offering of the course or option.

**Library**

A college library derives its strength from its collection and from the staff who are trained to make library materials useful to the students.

The many and varied curriculums are supported by a collection of 80,000 volumes. Designated as a United States Depository for the federal government, the library is able to make available a wide selection of documents to the students and faculty and to the community at large. Librarians are involved in individual and group instruction for the entire seventy-seven hour week.

Of the 950 periodical and newspaper subscriptions, many are also available on microfilm. Microfilm readers, reader-printers and a copying machine are useful in assisting students to make the fullest possible use of materials.

A separate area in the library provides facilities for individual or group viewing of slides, films, film strips, film loops and other visual materials. Magnetic tape recorders and record players give access to a large collection of phonograph records and taped materials.
AUDIO-VISUAL SERVICES

The Audio-Visual Services Department creates, for instructional purposes, films, video tapes, audio tapes, slides, transparencies, and other instructional aids. A television studio is maintained in Whitman Hall with two Vidicon-cameras, a dissolve and special effects unit and film chain. A language laboratory-dial access retrieval system is installed in Nathan Hale Hall for both classwork in languages and for individual student use in all disciplines.

Equipment may be borrowed under proper authority for classroom support and other college activities.
Registration and Accreditation

All curriculums have been registered by the State Education Department of the University of New York and are approved for the purpose of awarding the degree of Associate in Science (A.S.) to graduates of the Engineering Science curriculum, the Associate in Arts (A.A.) to graduates of the Liberal Arts curriculum and the Associate in Applied Science (A.A.S.) to graduates of the degree granting technical programs.

The Middle States Association of Colleges and Secondary Schools has granted accreditation to the State University of New York as an entity, and this accredited status applies also the State University Agricultural and Technical College at Farmingdale.

The College is approved by the Veterans Administration for the training of veterans under the Veterans’ Readjustment Benefits Act of 1966, in addition to veterans and eligible dependents of deceased veterans attending under the Korean Bill and War Orphans Education Assistance Act.

The Dental Hygiene curriculum is accredited by the American Dental Association.

The Nursing curriculum is accredited by the National League for Nursing.

The Aircraft Operations Technology curriculum is approved by the Federal Aviation Agency to provide Basic and Advanced Ground School for Private and Commercial Pilots.

The Engineers’ Council for Professional Development has accredited curriculums in Air Conditioning Technology, Chemical Technology, Civil Technology—Highway, Construction Technology—Building, Electrical Technology—Electronics, and Mechanical Technology.

Veterans

The College is approved by the Veterans Administration for the training of veterans under the Serviceman’s Readjustment Benefits Act of 1966, in addition to veterans, and eligible dependents of deceased veterans, attending under the Korean Bill and War Orphans Education Assistance Act. Under these laws eligible students are required to pay their own tuition and fees. They, in turn, receive financial benefits directly from the Veterans Administration. Upon receipt of the Certificate of Eligibility from the Veterans Administration, the student should present said certificate to the Student Personnel Office for completion.
Urban Center

Recognizing the need to serve an ever widening circle of Long Island residents, the State University of New York has established an Urban Center for unemployed and underemployed persons 18 years of age and older. Located on the campus of the Agricultural and Technical College at Farmingdale, the Center is equipped to provide tuition free occupational and job related academic training for persons interested in improving themselves personally and vocationally, but unable to enroll in a degree granting college program.

The non-credit courses are designed for three groups of persons:—those already employed who need further training in their chosen vocation; those now employed who seek new skills for better job placement, and those who will use this program as a pipeline to college, or specialized careers.

For Registration Information and Applications Please Phone or Write
Address: SUNY URBAN CENTER Telephone: 420-2280
FARMINGDALE, N.Y. 11735

Evening College

The Evening College provides degree and certificate programs as well as individual courses designed to meet the part-time educational needs of the Long Island Community.

Programs are planned to develop technical competence for those already employed as well as those who wish to prepare for or to change employment. The Evening College cooperates with business, industrial, union, community, and professional groups in organizing and conducting short courses, seminars, and special educational programs to meet their needs.

Summer Sessions

The Evening College conducts Summer Sessions both morning and evening which offer an opportunity for students to improve their readiness for college through college preparatory courses in science, mathematics and English. In addition, many college level courses are offered, which permit students to take advanced work or to rectify previous college deficiencies.

The Campus

The College campus of some 380 acres is situated one and one-half miles north of the village of Farmingdale, on Melville Road. It is just off Route 110, about midway between the Southern State Parkway and the Long Island Expressway and Northern State Parkway.

Field Trips

The location of the College affords many opportunities for field trips to supplement classroom and laboratory instruction. Field trips enlarge and crystallize on-campus educational values; they are an integral part of the training.
Faculty-Student Association

The Faculty-Student Association is a non-profit corporation formed to promote and cultivate educational and social relations among the students and faculty of the State University at Farmingdale. Any reserve funds which are received from its operations must be used to promote all-college educational purposes. The Association takes a responsibility for supervision of the College Bookstore and all assessments voluntarily levied by the students on themselves.

ENTRANCE REQUIREMENTS AND RELATED INFORMATION

Admission to this College and to all other colleges of the State University of New York are based on the academic qualifications of the respective applicants, and are made without regard to the race, color, creed, or national origin of individuals.

1. Applicants must be graduates of approved four-year high schools, or hold a high school equivalency diploma.
2. Applicants must be of good character.
3. Applicants must submit evidence of satisfactory health in advance of registration.
4. Applicants must have satisfactorily completed at least 16 units of high school credit, which should include the following specific curriculum requirements:

Two-Year Degree Programs

Advertising Art and Design

Art 2 units
Student portfolios will be reviewed
Tests in art aptitude and ability will be given to all candidates

Agriculture, Food Processing Technology, and Ornamental Horticulture

Mathematics 2 units (Elementary Algebra required)
Science 2 units (Biology and Chemistry recommended)

Air Conditioning

Mathematics 2 units (Elementary Algebra and either Plane Geometry or Intermediate Algebra required)
Science 2 units (one with an associated laboratory recommended)
Biological Technology
Mathematics 2½ units (Elementary Algebra, Plane Geometry, Intermediate Algebra required)
Science 2 units (Biology and Chemistry required)

Business Administration
Mathematics 2 units (Elementary Algebra, Plane Geometry required)

Community Service Assistant
Mathematics 1 unit (Elementary Algebra required)
Science 2 units (Biology recommended)

Correctional Administration
Mathematics 2 units (Elementary Algebra required)
Science 2 units

Data Processing
Mathematics 2 units (Elementary Algebra, Plane Geometry required; Intermediate Algebra recommended)

Dental Hygiene
Science 2 units (Biology and Chemistry required)

Electro-Mechanical Technology
Mathematics 2 units (Elementary Algebra and either Plane Geometry or Intermediate Algebra required)
Science 2 units (one with an associated laboratory recommended)

Engineering Science
Mathematics 3½ units (Elementary Algebra, Plane Geometry, Intermediate Algebra, Advanced Algebra required)
Science 1 unit (Physics required)

Engineering Technologies*
Mathematics 3 units (Elementary Algebra, Plane Geometry, Intermediate Algebra required; Trigonometry recommended)
Science 3 units (1 science must include an associated laboratory; Chemistry and Physics recommended)
Graphic Arts and Advertising Technology

Art 2 units
Mathematics 1 unit (Elementary Algebra required)

Liberal Arts and Sciences**

Mathematics 3 units (Elementary Algebra, Plane Geometry, Intermediate Algebra recommended)
Science 2 units (Biology, Chemistry or Physics recommended)
Foreign 2 units recommended

* Includes Aerospace, Automotive, Chemical, Civil, Construction, Electrical, Mechanical, and Photographic.

** Open to commuting students only from Nassau and Suffolk Counties.

Medical Laboratory Technology

Mathematics 2 1/2 units (Elementary Algebra, Plane Geometry, Intermediate Algebra required)
Science 2 units (Biology and Chemistry required)

Mortuary Science

Mathematics 2 units (Elementary Algebra, Plane Geometry recommended)
Science 2 units (Biology and Chemistry required)

Nursery Education

Mathematics 1 unit (Elementary Algebra required)
Science 2 units (Biology recommended)

Nursing

Mathematics 1 unit (Elementary Algebra required)
Science 2 units (Biology and Chemistry required)

Police Science

Mathematics 2 units (Elementary Algebra required)
Science 2 units

Recreation Supervision

Mathematics 2 units (Elementary Algebra required)
Science 2 units (Biology recommended)
Secretarial Science—Advertising, Executive, Legal
Mathematics 1 unit (Elementary Algebra required)

Secretarial Science—Medical
Mathematics 1 unit (Elementary Algebra required)
Science 2 units (Biology and Chemistry recommended)

Aerospace Service Aide
Audio-Visual Communications
Ornamental Horticulture
Mathematics 1 unit
Science 1 unit

5. The College encourages all applicants to take the New York State Regents Scholarship Examination. The Regents Scholarship Examination is given in all New York State high schools each year, usually in October. Applicants should apply for this or an acceptable equivalent examination through their local high school.

Out of state applicants and members of the Armed Forces, as well as New York State residents who do not take the New York State Regents Scholarship Examination, may submit the College Board Scholastic Aptitude Tests in lieu of the Regents examination. For further information and application materials for the Scholastic Aptitude Tests write to either (1) College Entrance Examination Board, Box 592, Princeton, New Jersey 08540; or (2) College Entrance Examination Board, Box 1025, Berkeley, California 94701.

Although the above examinations are not required by the College, the results, when submitted, are considered in selecting students as well as for guidance purposes. These, and additional tests, may at times be required. Academic weaknesses are scrutinized, and remedial programs recommended or required where necessary.

6. Applicants with a subject deficiency may be required to correct the deficiency prior to registration.

7. Applicants may be requested for a personal interview.

8. Scholastic record, extra-curricular activities, out-of-school experiences, health, physical ability, test results, and personal interview may all be considered in evaluating an applicant’s preparation for college. From this information the candidate’s acceptability is ultimately determined.
Application for Admission

Persons desiring to file an application should write to the Director of Admissions, State University Agricultural and Technical College, Farmingdale, New York 11735 or their district high school for an application form. A non-refundable application fee is required of all applicants.

Admission and Registration

First semester students in most curriculums are admitted only in the fall semester.

Registration is required before a student may attend classes. This involves the payment of all charges as outlined in the section on Expenses. Students registering late or reporting late for the work of any semester are accountable for absences incurred thereby and are required to pay a minimum penalty fee of $10.00.

Procedure for Applicants from Countries Other Than the United States

1. Submit request for application material.
   a. State clearly the number of years completed in elementary and secondary school, and college or university study.
   b. Determine the specific field of study.
   c. Review educational qualifications. Applicants must have successfully completed the equivalent of twelve years of United States elementary and secondary school study.

2. After receiving a State University Application for Admission:
   a. Submit completed application at least six months before the beginning of the semester in which you wish to enter the College.
   b. Accompany application with photostatic copy and translated copy of school records which clearly indicates highest level of study completed. Copy must be attested as true.
   c. Submit substantiation of knowledge of the English language. All applicants whose native language is not English must sit for The Test of English as a Foreign Language (TOEFL), administered by the Educational Testing Service, and have the test results forwarded to the College.
   d. Submit a certified statement describing the manner in which expenses for travel and study will be paid.
Admission to Advanced Standing

All applicants who have attended other colleges must meet curricu-
ulum entrance requirements and must submit transcripts of their previous col-
lege records and indication of honorable dismissal. Students who wish to trans-
fer college credits must submit an official transcript from their previous college
to the Director of Admissions at Farmingdale and follow the regular admissions
procedure.

Transfer credit will usually be granted for course work at accredited col-
leges that was completed with a grade of "C" or better, provided the subject
matter was substantially equivalent to that offered at Farmingdale. Achievement
points will not be credited. To be eligible for the Associate Degree, transfer
students must earn at least the equivalent of one year’s credits in residence
at the College.

Credits may be granted for appropriate courses completed at non-accredited
institutions upon successful completion of an examination constructed and ad-
ministered by the College. The limit of such credit by examination will be
nine credits. A fee of $10.00 shall be assessed for each examination.

Exemption from certain courses may be granted for subjects taken at non-
accredited institutions that are comparable in content to required courses. In
these cases, credit will not be granted and the student will be required to com-
plete a number of credits equal to those given in the course which was granted
in exemption.

Credit will not be granted for courses completed at any institution more
than ten years prior to application to the degree program.

This College participates in the College Proficiency Examination Program
offered by the New York State Education Department. A student may obtain
college credit by examination under this program. Information about the sub-
jects covered and their applicability to the programs at this College can be ob-
tained by writing to the Dean of Instruction, or to the State Education Depart-
ment, College Proficiency Examination Program, Albany, New York 12201.

Visiting the College

The College encourages interested people to visit the campus. Stu-
dents who are considering enrollment at Farmingdale will find this an excellent
opportunity to learn more about the courses of study. Before visiting the Col-
lege, it is strongly urged that the prospective applicant and his parents review
the catalog and supplementary information available through the local high
school Guidance Office or from the Office of Admission at the College.

The Office of Admissions, located on the first floor of the Administration
Building, is open throughout the year. Counselors are available for interviews
Monday through Friday from 9:30 A.M. to 4:30 P.M. It is advisable to schedule
an appointment in advance of the visit.

"Open House," held annually in the spring, provides an additional oppor-
tunity to inspect the campus. The public is cordially invited.
Handicapped Students Services
In 1971 the State University at Farmingdale initiated a program supported in part by a Federal Education Act Grant, to make the College's programs and facilities more accessible to the physically handicapped. Farmingdale now provides a variety of supportive services which include guidance, accessible facilities, special educational equipment, and an electric-lift bus.
For more information, call Dr. Morton Thompson, coordinator, Program for Handicapped Students, 420-2158 or the Admissions Office.

FINANCES

Tuition
The State University Board of Trustees has established a policy of uniform tuition charges. Residents of New York State are assessed a tuition of $550.00 a year. Non-residents of New York State are assessed $900.00 a year. Part-time students are assessed a charge $18.50 for each credit hour.

A student considering admission to college should begin assessing the source of his funds before registration. A student should be prepared to pay the tuition, fees, and other charges, including books and equipment, for the first semester. Special arrangements cannot be made to postpone payment of tuition and fees.

Tuition Awards: The New York State "Scholar Incentive Award Program" provides scholarships which apply towards tuition costs. Every resident of New York State is eligible to submit an application. For further details read the paragraph on Scholar Incentive Awards under the heading of "Financial Aid" in this catalog.

Tuition Payment: Payments for tuition, fees, room, board and similar charges are made at the beginning of each semester. In other words, the $550.00 tuition charge is paid in $275.00 installments each semester. Fees, room, and board are paid on the same basis.

All charges are subject to change without prior notice.

Transportation to Field Experiences
Students in the Aerospace Technology Community Service Assistant, Dental Hygiene, Medical Laboratory, Mortuary Science, Nursing, Nursery Education and Recreation Supervision curriculums are required to participate in regularly scheduled clinical and field experiences arranged by the College in local schools, hospitals, industrial plants and business establishments. Each student is responsible for arranging and paying the transportation to regularly scheduled off-campus experiences.

Since public transportation is not available, Freshmen Residence Hall Students in the above mentioned curriculums must apply to their Department Chairman at the time of registration for parking privileges, for their own cars in the Residence parking lot during any semester in which the student has regularly scheduled off-campus assignments. (Check individual curriculum page for courses so designated.)
**Fees**

All fees, tuition, and other charges are subject to change without prior notice.

<table>
<thead>
<tr>
<th>Fee</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Fee*</td>
<td>$ 12.50 per semester</td>
</tr>
<tr>
<td>Student Activity Fee*</td>
<td>$ 30.00 per semester</td>
</tr>
<tr>
<td>Insurance: (a) Men</td>
<td>$ 30.00 per calendar year</td>
</tr>
<tr>
<td>(b) Women</td>
<td>$ 30.00 per calendar year</td>
</tr>
<tr>
<td>Graduation Fee</td>
<td>$ 12.50 paid 4th semester</td>
</tr>
<tr>
<td>Residence Halls Services (Residents only)</td>
<td>$ 13.00 per semester</td>
</tr>
<tr>
<td>(Depending on residence assigned)</td>
<td>$190-300 per semester</td>
</tr>
<tr>
<td>Board</td>
<td></td>
</tr>
<tr>
<td>Five-day Plan (15 meals/week)</td>
<td>$235.00 per semester</td>
</tr>
<tr>
<td>Seven-day plan (21 meals/week)</td>
<td>$305.00 per semester</td>
</tr>
<tr>
<td>Student Nursing Fee</td>
<td>$ 20.00 per academic year</td>
</tr>
</tbody>
</table>

* Part-time students pay $0.85 per credit per semester.

**Fees and Charges Explained**

The **College Fee** is required of all students by State University. It includes the cost of general laboratory materials and supplies.

The **Student Activity Fee** supports student activities; includes admission to all home athletic contests, a subscription to the *Rambler*, the student newspaper, and a copy of the *Islander*, the student yearbook. Lifetime membership in the Alumni Association for graduates of the College is covered by part of this fee.

**Insurance.** An accident and health insurance policy covering most medical payments is maintained for the welfare of the students.

The **Graduation Fee** is required of all seniors, payable before the beginning of the Fourth Semester, to defray in part the cost of renting caps and gowns, the diploma, and the commencement expenses.

The **Residence Halls Service Fee** covers the cost of renting linen lockers, laundering, and distributing bed linens, and all other residence halls services. This fee also provides the funds for the Student Inter-Dormitory Council budget.

**Room Charges** cover the cost of a room on a seven-day a week basis, two students to a room. All pertinent information on the subject is provided in the "Manual for Resident Students."

**Board Charges** cover meals five days or seven days a week depending on option selected. Refunds are prorated on the semester, but require two weeks notice in writing.

All students engaged in the Physical Education Program must purchase regulation shirts, shorts, and gym shoes during the first week of attendance.
Advance Deposits

A advance tuition deposit of $50.00 is required according to instructions conveyed in the student's Certificate of Admission. This advance deposit is applicable toward tuition due at registration. This tuition deposit is not refundable unless prior written notification which adequately explains the reason for the withdrawal request has been given to the Admissions Office.

A room application fee of $25.00 is required of any student who wishes to apply for a room on campus. Refunds are granted if written notice is received at least sixty days before registration when accommodations are available. The application fees is due at the time the student submits his housing application. Students dismissed from the Residence Hall as a result of disciplinary action are not entitled to any refund of room and board charges.

Effect of Withdrawals on Refunds

A student who has been given permission to withdraw after instruction has begun, may, at his option, be granted either a transfer fee credit within the State University system, or a refund of a portion of his tuition and fees. The Student Activity Fee is not refundable unless prior approval is obtained from the Chief Administrative Officer. No consideration will be given to refunding this fee until the student has completed the formal withdrawal procedures.

Total Estimated Cost

Estimated cost for students who commute will range from $1,400.00 to $1,600.00 for one academic year (two semesters). For resident students, from $2,400.00 to $2,600.00.

Estimated expenses per academic year are computed as follows:

<table>
<thead>
<tr>
<th></th>
<th>Residents</th>
<th>Commuters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$ 550.00</td>
<td>$ 550.00</td>
</tr>
<tr>
<td>Fees (See section covering fees to determine exact amount applicable)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Room</td>
<td>380.00 to 600.00</td>
<td>–</td>
</tr>
<tr>
<td>Board:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Five-day Plan</td>
<td>500.00</td>
<td>200.00</td>
</tr>
<tr>
<td>Seven-day Plan</td>
<td>640.00</td>
<td>300.00</td>
</tr>
<tr>
<td>Books</td>
<td>200.00</td>
<td>200.00</td>
</tr>
<tr>
<td>Travel</td>
<td>100.00</td>
<td>300.00</td>
</tr>
<tr>
<td>Personal Expenses</td>
<td>250.00 to 350.00</td>
<td>250.00 to 350.00</td>
</tr>
</tbody>
</table>
Call to Military Service

If either the date of a student's actual induction into active military service, or the reporting date of a reservist's recall to active military service occurs during an academic semester, the student will be entitled to a full refund of all fees and charges for that semester. This is subject to the following exception:

If the student, as of the date of entry into active military service, will have had opportunity to attend 75% of the class sessions, the instructor may make provision for special work or testing which will make possible achievement of credit for a semester's work in the course. No refunds, of course, will be available to a student who has earned credit for the semester's work.

Financial Aid

The College participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Entering students seeking financial assistance are required to submit a copy of the Parent's Confidential Statement (PCS) form to the College Scholarship Service, designating State University Agricultural and Technical College at Farmingdale as recipient. The Parents' Confidential Statement (PCS) form may be obtained from a secondary school, the College Financial Aid Officer, or the College Scholarship Service, P.O. Box 176, Princeton, New Jersey 08540, and should be filed before June first.

Scholarships, Loans, and Part-time Employment

State Scholarships

The scholarships provided by the State of New York are:

Scholar Incentive Award. Most New York State residents qualify for this award.

Regents College Scholarship. This scholarship is based on the results of the Regents Scholarship Examination.

State Scholarship for Children of Deceased or Disabled Veterans. This scholarship is obtained in the same manner as the Regents College Scholarship, except that the amount of the award may differ.

The State University Scholarship Award. This program provides that an enrolled student whose New York State net taxable family income is $2,000 or less shall be awarded an amount equal to the tuition charge for the year.

Vocational Rehabilitation. The State of New York provides assistance for handicapped students through the Division of Vocational Rehabilitation. While all handicapped students do not qualify, many are eligible. The local units of the Division of Vocational Rehabilitation should be consulted for further information. Note: Applications and specific information regarding State Scholarships may be obtained by writing to: The University of the State of New York, State Education Department, Regents Examination and Scholarship Center, Albany, New York 12224.
Federal Grants

The Federal Government offers Economic Opportunity Grants ranging from $400.00 to $1,000.00 a year to students who meet specific criteria. These scholarships are offered under the provisions of Title IV of the Higher Education Act of November 8, 1965. The scholarships will be awarded on the basis of academic promise and exceptional financial need.

Information concerning Opportunity Grants will be provided upon request by the Director of Financial Aid of the College.

Veterans may attend the State University under the benefits of Public Law 894 (disability), P.L. 550 (Korean War), or any additional benefits approved by the Congress of the United States. Under these laws eligible students are required to pay their own tuition fees. They, in turn, receive financial benefits directly from the Veterans Administration. Upon receipt of the Certificate of Eligibility from the Veterans Administration, the student should present said certificate to the Student Personnel Office for completion.

Law Enforcement Assistance Grant

The goal of the law enforcement student program is to encourage in-service law enforcement officers to upgrade their educational levels and to enhance their skills and capabilities. Payment for tuition and fees may not exceed $300 per semester.

Nursing Scholarship

The Health Manpower Act of 1968 amends the Public Service Act to strengthen the provisions of programs of financial aid to Nursing students. Students of exceptional financial need accepted for enrollment as full-time students will receive this scholarship to enable them to attend this College.

Murcott Scholarship Fund

Mr. and Mrs. Charles Murcott have established a scholarship fund to be entitled the Murcott Scholarship Fund. Mr. Charles Murcott, President of Lumex Inc. in Bay Shore, New York has provided this assistance to aid students who demonstrate financial need and who demonstrate promise of success in higher education. Preference is given to those students residing in Nassau County and pursuing careers in Nursing and Mechanical Technology.

College Scholarships

Scholarships have been made available to the College through the generosity of interested individuals, associations, and groups. The scholarships are awarded to students who have been in attendance at the College. Awards are based on academic achievement and other special criteria. These scholarships will be awarded through the academic departments of Nursing, Dental Hygiene, Secretarial Science, Food Processing Technology, Ornamental Horticulture, Biological Technology, Animal Science, Air Conditioning, Construction Technology and Mortuary Science.
Part-Time Employment

There is a part-time employment program operated by the College. It is referred to as the College Work-Study Program.

The College Work-Study Program is a program intended for students who need part-time work to meet some expenses. Eligibility is based on family income and financial need. Applicants must be full-time, matriculated students in good academic standing. Most positions are on-campus. Under this program, a student may work a maximum of fifteen (15) hours in any week that classes are in session, and a maximum of forty (40) hours during a scheduled vacation period. A student accepted for fall admission may work during the preceding summer. Students may continue their employment in this program as long as they meet the eligibility requirements.

Student Loans

The College participates in four major loan programs: The New York State Higher Education Assistance Corporation (NYHEAC), the National Defense Student Loan (NDSL), the Nurses Training Loan (NTL), and the Law Enforcement Assistance Program (LEA). These programs allow students to borrow money to meet college expenses. No payment is due on these loans nor does interest accrue while the student is in college. Payment on a low interest rate basis begins after graduation with some provisions for forgiveness for all but the NYHEAC.

For further information on these programs write to the Director of Financial Aid, State University Agricultural and Technical College at Farmingdale, Melville Road, Farmingdale, New York 11735.

Faculty Student Loans

Short-term emergency loans are available to students. These loans are available for a period of thirty (30) days. Students may borrow up to $50.00 for a valid reason and repayment must be made within thirty (30) days. No loans will be approved within four weeks of the end of a semester.
ACADEMIC INFORMATION

Grades and Achievement Points

The following is the official College grading system:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Interpretation</th>
<th>Achievement Points Per Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
<td>4.0</td>
</tr>
<tr>
<td>B+</td>
<td>Good</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>Satisfactory</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>2.0</td>
</tr>
<tr>
<td>D+</td>
<td>Minimum Passing</td>
<td>1.5</td>
</tr>
<tr>
<td>D</td>
<td>Minimum Passing</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>Failure or Unofficial Withdrawal</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Withdrawn</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Withdrawn Passing</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Withdrawn Failing</td>
<td></td>
</tr>
</tbody>
</table>

In computing averages for all students only grades earned at the College are considered. A student must maintain a 2.0 grade point average in order to remain in good standing scholastically and to qualify for graduation. If at the end of any semester a student is deficient in achievement points, he may be placed on probation or considered for dismissal, depending on the extent of the deficiency. A student on recommendation of the Department Chairman may be required to carry a reduced schedule.

The following tables serve as a guide for determining academic status:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Academic Probation</th>
<th>Academic Dismissal</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Below 1.5</td>
<td>Below 1.1</td>
</tr>
<tr>
<td>Second</td>
<td>Below 1.7</td>
<td>Below 1.4</td>
</tr>
<tr>
<td>Third</td>
<td>Below 1.9</td>
<td>Below 1.7</td>
</tr>
</tbody>
</table>

To determine the achievement point average, multiply the achievement point value of each grade by the credits designated for each subject, then divide the total achievement points by the number of credits carried.

The Dean's List

The Dean's List is composed of all students who have an average of 3.00 or better, with the exception of those who have failures, incompletes, "D" grades, or "Y" grades, or have earned less than twelve semester credits. The Dean's List is determined at the end of each semester and is entered on the student's permanent record.
A Grade of Incomplete

The grade "Incomplete" or "I" is reported when, for some reason beyond his control, the student misses the final examination or a portion of the required work of the course. No grade points are awarded for an incomplete. All incomplete grades must be removed within 30 days after the end of the semester. After that, they automatically become failures, unless the Dean of Students permits an extension of this period for good cause. Request for extension must be in writing.

Failing Grades and Repeating of Courses

To qualify for graduation, a student must successfully complete all requirements for his curriculum. Therefore, a failure must be repeated although in special cases an equivalent course may be permitted.

A student is advised to consult with his Department Chairman when repeat of a failed course is contemplated.

Formal approval from the Dean of Instruction must be obtained if a student wants to take a course at another college. In that case, credits, but not achievement points, will be applicable toward the degree.

If a student repeats a course in either the Day or Evening branches of this College, achievement points and credits will be applicable toward the degree.

A student must have approval of his Department Chairman if he wishes to repeat a course in order to raise a grade. The most recent grade in the course becomes his official grade for the course, including a "Y" grade.

W, X, and Y Grades

W-An approved withdrawal from a course without evaluation of progress. The Department Chairman and the Dean of Students, after consultation with the instructor concerned, may approve a grade of "W".

The grade of "W" will not be given if the withdrawal takes place after the eighth week of classes unless the withdrawal results from unusual circumstances beyond the control of the student.

X-An approved withdrawal from a course while doing passing work. Permission of the Department Chairman and Dean of Students is necessary for this grade.

Y-An approved withdrawal from a course while doing failing work unless a grade of "W" has been approved. (The final grade of "Y" will be treated as an "F" in determining cumulative average.)

Students withdrawing from a course without permission will be carried on class rolls and will receive a final grade of "F".
Permission to Carry Extra Course
Any student who wishes to carry more than the prescribed number of credits scheduled in his curriculum during any one semester, must receive written approval from his Department Chairman and the Dean of Students. To obtain approval to carry extra course, a student should have demonstrated his ability to achieve better than minimal (2.0) average work with no failing grade in the previous semester.

A student desiring to take courses at another college must consult with the Dean of Instruction before registering for these courses.

Course Auditing
Full-time students currently enrolled at State University Agricultural and Technical College at Farmingdale who wish to audit a course must secure permission to do so from the office of the Dean of Instruction.

School Closing
In the event that inclement weather, or other unforeseen circumstances make it necessary to cancel college classes, students are advised to listen to local radio stations announcing the College's decision. A listing of such stations will be posted on campus bulletin boards and in such student publications as the Rambler and What's New. In order to make up for work lost, classes that have been cancelled may be rescheduled at the discretion of the College.

Requirements for Graduation
1. Recommendation of the Faculty.
2. Satisfactory completion of the minimum number of credits required by the specific curriculum.
3. The earning of a 2.00 achievement point average.
4. Evidence of good character and moral worth.
5. Payment of all financial obligations.
6. Attendance at Official Convocations.

Procedure for Degree Candidates
1. Application for the Associate degree must be completed and filed with the Dean of Students no later than one month after beginning of semester in which degree requirements will be met. Applications for the degree are available from Department Chairmen.
2. The Graduation Fee is payable at registration for the fourth semester.
3. Candidates for degrees must comply, before end of third semester, with requests from the Placement Office for faculty recommendation.
4. Attendance at the June Commencement ceremony is expected of all students who have met the requirements of the degree.

Those unable to participate must inform the Dean of Students in writing.
Transfer to Other Colleges

The College course of study is specifically designed to achieve College objectives. Except for Engineering Science and Liberal Arts and Sciences, the curriculum program is not presented as the first two years of a conventional four-year program. The pattern and content which is most effective in technical education does not necessarily conform to traditional first and second year college work. Nevertheless, many four-year institutions grant advanced standing credit to graduates of the College.

Credit is usually granted only for courses which are similar in content and scope to the program of the admitting institutions and is granted solely at the option of that institution. Applicants for transfer are, of course, expected to have maintained high standards of academic achievement.

The curriculum in Engineering Science and Liberal Arts is designed specifically to prepare the successful student for further study with full transfer credit. Information on this program is detailed in another section of this catalog.

Transcripts

A student leaving the College is entitled to have one transcript furnished at his request. No charge is imposed for this service. Additional transcripts will each cost $1.00. Requests for transcripts should be directed to the Registrar's office.

Attendance

To maintain highest quality of academic work, regular attendance at class is necessary. Absence from class is considered a serious matter and never excuses a student from class work. Students must complete all assignments, examinations, and other requirements of the course.

In some curriculums, clinical and laboratory experiences are gained in off-campus facilities. Students are required to provide their own transportation to these facilities.

Absences may be excused by the instructor after reviewing the student's justification. An excused absence gives the student the opportunity to make up work missed; it will not excuse him from that work.

If absence is anticipated, the student has the obligation to inform the instructor as far in advance as possible.

Students on the Dean's List will be extended discretion in attendance at lecture classes unless an announced examination is scheduled. Attendance at laboratory classes follows the standard attendance requirements.

Withdrawal from a Course

Students will not be permitted to withdraw from a course unless the Department Chairman and the Dean of Students concur that it is in the best interest of the student and the College. The same criteria will be used in granting permission to carry a reduced semester schedule. Students who withdraw without permission will be carried on class rolls and will receive a failing grade for all assignments and tests not completed.
Withdrawal from the College

If a student wishes to withdraw from the College, he must submit, in writing, to the Dean of Students, a notification stating his reasons at least three days before he intends to begin withdrawal proceedings.

Students who do not follow this procedure will be carried on the College rolls and will receive a failing grade for all assignments and tests not completed in each course.

No full or partial refunds of fees can be made until a student has officially completed the withdrawal procedure.

Information about a student's record will not be released until financial clearance has been obtained by the student.

Placement

The Placement Office assists in securing both full- and part-time employment for its students and alumni. The Office functions to establish a liaison with industry, to solicit full- and part-time positions for students and graduates, and to advise students on career planning.

To aid in the employment of students, the Placement Office sponsors an on-campus recruitment program. During the spring semester, corporate representatives visit the campus and interview June graduates for possible employment with their home firm. Students must complete the necessary registration material to be eligible for participation in this free service.

THE CAMPUS COMMUNITY

Residence Halls

In September, 1970, the College at Farmingdale opened a new residence complex to increase its resident student population to 1,200 students. This increase permitted more students to experience the group living situation on the campus.

The resident hall program is coordinated by the Department of College Housing which consists of the Director, Resident Counselors and Resident Assistants. The Director and Resident Counselors are trained professionals in the field of counseling whose main function is to assist resident students in social, personal and academic development while at Farmingdale. The Resident Assistants are upper class students who live on the floors of the students to assist resident students in whatever way possible, to make the living experience a positive one.

Various activities are provided for the resident students throughout the academic year. Aside from the College-wide activities provided by the College Union Board, the Department of College Housing provides various special programs such as International Nights in the Dining Hall and various dances. Guest speakers are invited to the resident campus for informal discussion on various subjects of interest. All these activities are planned with the resident student government which is the Inter-Dormitory Council.
Recent policies that have been passed by the College include abolishment of Curfew for all students and both a limited and 24-hour visitation policy whereby students may visit each other in the residence halls. Students are given an option as to which type of living situation they prefer.

All residence halls are closed during extended holiday periods. Therefore, it is necessary for all resident students to make other arrangements during these periods.

Students withdrawing from the residence halls during an academic semester may receive pro-rated refunds for room and board charges depending upon the circumstances of their withdrawal.

Although the College has no accommodations for the families of married students it will assist married students, whenever possible, in securing off-campus housing.

Any questions concerning the residence halls should be addressed to the Director of College Housing.

**Dining Hall**

In September of 1970, along with the new residence halls complex, a new dining hall with a capacity of 1,600 students was completed. The dining hall has two meal ticket plans, a 5-day plan and a 7-day plan, at rates indicated in the catalogue. All resident students must participate in the meal plan. Excellent meals are prepared and served under the highest standards of nutrition and health. The Inter-Dormitory Dining Hall Committee assists the Dining Hall staff in menu planning and the arranging of special events.

No refunds are made for absences unless they are for prolonged and continuous periods. For students who go on field trips the Dining Hall staff will provide a box lunch. When a student is withdrawing, a two-week notice in writing must be submitted in order to have a refund initiated.

Because all meals and services are provided as near to cost as possible, rates are subject to change.

Snack bars providing limited food service accommodations are also available on campus.

**Student Automobiles**

All students are permitted to bring their cars on campus, except freshmen resident students, providing the automobiles are properly registered with the College. Regulations pertaining to the safe operation of automobiles are enforced by the Campus Security Officers. Freshmen enrolled in curriculums which schedule field experiences as part of their requirements may bring their cars on campus. Repeated or serious violation of traffic regulations will result in the withdrawal of the campus parking privilege. Automobiles must be kept in their assigned parking lots. Driving to and from classes is prohibited.
**Personal Property**

The College cannot assume liability for loss or theft of personal property or for damage to personal property on college grounds or in college buildings. Personal property is brought to the campus at the owner's risk. The use and care of personal property is the responsibility of the owner.

**Conduct of Students**

The College, in order to insure the optimum conditions for pursuing the objectives to which it is committed, expects and requires each student to conform to the law and accept the moral and social practices of the local community, the state and the nation. In general, it is required that each student conduct himself or herself in such a manner as to uphold the good name of the College and that of his fellow students. Each student, in his relationships with other students, faculty and/or administrators, shall respect the rights and privileges of the other party and conduct himself or herself accordingly.

Specific rules and regulations governing student conduct are published in the *Student Handbook*.

**Counseling Services**

The Student Personnel Office, administered by the Dean of Students, provides counseling services for any enrolled student. These services include academic advisement, placement or career advisement, personal counseling, and financial aid consulting. Students are encouraged to seek counsel from members of the Dean's staff at any time, for any reason. The use of this resource is left largely to the initiative of the student.

**Student Health Services**

The College endeavors to safeguard the health of all students while they are on the campus. A physical examination, required of all entering students prior to registration, furnishes valuable background information for the College Health Department.

The College's full-time nurses provide emergency medical service at the Health Service Center from 7:00 A.M. to 1:00 A.M. on days when school is in session. Limited medical attention is also provided by the College's part-time physician. All students are urged to consult the nurse at the first indication of physical disorder or in case of accident, however slight the accident or disorder may seem.

In unusual circumstances, the College reserves the right to call a consulting physician or a specialist in case of illness, the expense to be borne by the student.

The College maintains first-aid cabinets in the campus buildings. Special medical supplies prescribed by a physician are paid for by the student. If a student requires continuous medical attention, he may be advised to return to his home or to place himself under hospital care.
The right is reserved by the College to exclude from continued class attendance any person who, in the judgment of the authorities, is not physically qualified to follow the regular curriculum program.

**Dental Examination**

A certificate of good oral health must be submitted by all freshmen before the completion of their second semester at the College. This involves an oral examination which may be performed by the College Dental Hygiene Clinic or by the student’s personal dentist. If need for oral prophylaxis or remedial work is indicated, proper action must be taken. To aid in achieving this requirement, the Dental Hygiene Department will schedule appointments for all freshmen throughout the year. There will be no charge for the oral examination or the oral prophylaxis if obtained through the College Dental Clinic. General policy will be to refer remedial work to the student’s personal dentist.

**STUDENT ACTIVITIES**

The College has, throughout its history, sought development of the whole student through encouragement of extra-curricular activities to supplement the academic atmosphere of classroom and laboratory. Farmingdale is proud of an activities program that provides outlets for a wide variety of student interests: professional, religious, cultural, social, recreational, journalistic, and governmental.

**The President’s Luncheon**

This activity has been scheduled to honor students who have been active in student activities during the year. At the annual banquet held at the end of the Spring Semester, the President of the College pays tribute to students falling under the aforementioned category. Awards are given to each student so that the student will always remember the event in his later years. Many students and faculty alike feel that this is the most honorable award that can be received by students.

Students are picked by the Faculty Advisors of each organization. They are requested by the Student Activities Office to nominate those fourth semester seniors who have contributed measurably to the program of the organization, giving of themselves freely for the good of the group.

**Student Government Organizations**

A. *STUDENT GOVERNMENT ASSOCIATION*—Fifteen (15)

Senators from the student body of each entering class are elected to the governing board to act in matters which promote the interests of the College and its students. The Student Senate has authority over all other student organizations, especially in the financial area, since the Student Senate is responsible for distributing the monies taken in via student activities fees. In addition, the Student Senate is involved with implementing changes in campus policy. Some of the College committees the Student Senate is involved with are as follows: Ad-
missions and Academic Standards, Calendar, Faculty-Administrative-Student-Trustee-Alumni (FASTA), Disciplinary Hearing Committee, Faculty-Student Association, Alcohol Policy Committee, Blood Bank Committee, Orientation Committee, and Safety Division Committees.

B. **INTER-DORMITORY COUNCIL**—Students are elected from each dorm and meet at the Inter-Dormitory Council (IDC) meeting to discuss dormitory policy, recommend new policy, and plan activities for dorm students. Various standing committees (Food Service, Vending Machine, Dress Code, Social, etc.) exist which keeps IDC informed of current practice. The Council has been instrumental in changing dormitory policy, as well as making improvements in dormitory living.

**The College Union and College Union Board**

THE COLLEGE UNION is the community center of the College for all the members of the College family—students, faculty, administration, alumni, staff, and guests; it is also an organization and a program. Together they represent a well-considered plan for the community life of the College. THE COLLEGE UNION program contributes to the educational purposes of the College, for it serves as a citizenship training laboratory in social responsibility and domestic leadership. Through its various boards, committees and staff, the COLLEGE UNION BOARD provides a cultural, social and recreational program designed to make free-time activity a cooperative factor with study in education and to provide the maximum opportunity for self-realization and individual growth in social competency and group effectiveness. THE COLLEGE UNION RECREATION PROGRAM, featuring facilities for informal participation in billiards, table tennis, bowling, chess, and similar pastimes, is also under the advisement of the UNION BOARD.

On the Farmingdale campus the COLLEGE UNION BOARD is responsible for educating the student body outside the classroom, as described above, and accomplishes this task by sponsoring the “Distinguished Speakers Series,” “Cultural Attraction Series,” “Distinguished Film Series,” “Coffee House Circuit,” and “Pop Concerts.” The total program of the COLLEGE UNION BOARD is left up to the discretion of the students. Any student who is interested in scheduling activities and selecting speakers, artists, films, etc. to benefit the total campus community should join the COLLEGE UNION BOARD and attend the regular meetings. THE COLLEGE UNION BOARD meets on Thursday (when no performance is scheduled) at 12:00 Noon in Roosevelt Hall, Room 109D. Feel free to stop by the Student Activities Office, Roosevelt 116 for further information in this regard.
Student Organizations

At the heart of the entire activities program are some sixty student organizations, each of which benefits from the advice of at least one faculty sponsor. Rare indeed, is the Farmingdale student who does not affiliate with at least one of these groups during his two years on campus.

A. CURRICULUM CLUBS—Roughly, half of the student organizations are curriculum clubs designed to serve the pre-professional interests of students and relate directly to various academic departments.

B. RELIGIOUS CLUBS—Religious Chaplains are available to students from the following faiths: Catholic, Episcopalian, Jewish, Lutheran, Methodist, Christian Science, and Society of Friends. Students should contact the Student Activities Office, Roosevelt 116, for further information regarding the Chaplains. The religious clubs on campus are as follows: Newman Club, Hillel Club, Canterbury Club, Student Christian Association, and Christian Science Organization.

C. RECREATIONAL CLUBS—The College encourages participation in various leisure time activities. The following clubs help in attaining this goal: Gun Club, Judo Club, Chess Club, Ski Club, and Hockey Club.

D. COMMUNICATION CLUBS—These important outlets for campus news and opinion are open to all students. Accomplished skills in writing, speaking, or the mechanics of publications and engineering are not required. The organizations are as follows: Rambler (Newspaper), Islander (Yearbook), Chanticleer (Literary Magazine), WYNM (Ham Shack), and WATC (AM Station).

E. SOCIAL-SERVICE ORGANIZATIONS—These organizations perform service to the local community on behalf of the College, as well as provide an opportunity for students to interact socially. The men’s social service organizations are: Sigma Lambda Phi and Tau Kappa Beta; its female counterpart is Psi Theta Epsilon and Alpha Tau Sigma.

F. CAMPUS WIDE ORGANIZATIONS—General Organizations exist because students in the past have additional interests other than those already mentioned. Each club listed below is self-explanatory via name: Black Student Union, Collegiate Chorale, Drama Club, Debate Association, International Club, Student Faculty Union for Peace and Educational Reform, League for Social Justice, Students for Promotion of Identity on Campus, Students and Professional Educators Council for Truth and Responsible University.

G. HONOR SOCIETY—One of the greatest honors a Farmingdale student may receive is election to the local chapter (Mu Omega) of Phi Theta Kappa, the National Junior College Honorary Scholastic Society. The Honor Society has effectively instituted a tutorial program for both area high schools and Farmingdale students.
Social Events

Traditional College social affairs include the Senior Prom, Student Senate Semi-Formal and Winter Weekend, a three day ski session during semester break.

In general, College social events (dances, pop concerts, etc.) are held throughout the year, either on campus in such facilities as the Log Cabin or Allard Field House. Most of these events are under the direct sponsorship of various student organizations.

College Convocations

At various times throughout the year, the student body and faculty gather for official convocations of interest to the entire community. Attendance is expected.
ELECTIVE COURSES

Students may select elective courses from a wide range of "Common Electives" (open to all students) and "Technical Electives" (limited to certain curriculums). The following lists are representative; each term the specifics of courses available, credit hours, prerequisites, etc., are published for consultation by students and advisors, when the time comes for arranging schedules.

**Common Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 133</td>
<td>Traffic Management I</td>
<td>HU 101</td>
<td>History of Philosophy</td>
</tr>
<tr>
<td>BA 135</td>
<td>Salesmanship</td>
<td>HU 110</td>
<td>Music Appreciation</td>
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<tr>
<td>BA 151</td>
<td>Business Mathematics</td>
<td>HU 111</td>
<td>Survey of Contemporary Music</td>
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<td>BA 161</td>
<td>Business Law I</td>
<td>HU 115</td>
<td>Art Appreciation</td>
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<td>BA 206</td>
<td>Principles of Taxes</td>
<td>SC 107</td>
<td>Biology</td>
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<td>BA 216</td>
<td>Personnel Management</td>
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<td>U. S. History</td>
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<td>BA 231</td>
<td>Marketing II</td>
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<td>BA 238</td>
<td>Industrial Purchasing</td>
<td>SO 206</td>
<td>Economics</td>
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<tr>
<td>BA 240</td>
<td>Consumer Behavior</td>
<td>SO 214</td>
<td>Western Civilization</td>
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<td>BA 251</td>
<td>Investments</td>
<td>SO 215</td>
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<td>Political Science</td>
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<td>CH 104</td>
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<td>CH 106</td>
<td>Introduction to Biochemistry</td>
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<td>EN 108</td>
<td>Introduction to the Theatre</td>
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<td>Developmental Psychology</td>
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<td>EN 109</td>
<td>The Short Story</td>
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<td>EN 114</td>
<td>Speech</td>
<td>SO 234</td>
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<tr>
<td>HU 100</td>
<td>Introduction to Philosophy</td>
<td>SO 237</td>
<td>Anthropology</td>
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**Technical Electives**

**Advertising Art and Design**

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<td>AA 204</td>
<td>Advertising Illustration</td>
<td>AA 213</td>
<td>Technical Illustration</td>
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<tr>
<td>AA 218</td>
<td>Fashion Illustration</td>
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<td>Package Design</td>
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**Agriculture**

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<td>Agricultural Economics</td>
<td>AG 211</td>
<td>Animal Nutrition</td>
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<tr>
<td>AG 202</td>
<td>Comparative Animal Genetics</td>
<td>AG 212</td>
<td>Meat and Meat Products</td>
</tr>
<tr>
<td>AG 203</td>
<td>Beef Cattle Management</td>
<td>AG 213</td>
<td>Poultry and Physiology and Health</td>
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<tr>
<td>AG 204</td>
<td>Dairy Barn Management</td>
<td>AG 214</td>
<td>Soil and Water Conservation</td>
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<tr>
<td>AG 205</td>
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<td>Soil Fertility</td>
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<td>AG 206</td>
<td>Dairy Science</td>
<td>AG 216</td>
<td>Vegetable Production</td>
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<tr>
<td>AG 208</td>
<td>Field Crop Science</td>
<td>AG 218</td>
<td>Animal Care</td>
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<tr>
<td>AG 209</td>
<td>Fruit Science</td>
<td>AG 221</td>
<td>Metal Work</td>
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<tr>
<td>AG 210</td>
<td>Agricultural Construction and Mechanization</td>
<td>AG 211</td>
<td>Animal Nutrition</td>
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* The code symbols which precede the names of courses relate to the order of arrangement of courses, under the several instructional areas, in the list of course descriptions.
Automotive Technology
AT 205 Electricity
AT 207 Power Transmission
AT 210 Welding
AT 212 Machinery Marketing

Biological Technology
AG 102 Genetics
AG 215 Soil Fertility
SC 241 Environmental Protection I
SC 242 Environmental Protection II
SC 223 Ecology
OH 201 Principles of Arboriculture
OH 223 Plant Breeding
PT 220 Biological Photography
PT 221 Biological Photography
SC 204 Entomology II
SC 207 Economic Botany
SC 212 Weeds and Their Control
SC 221 Introduction to Oceanography
SC 225 Parasitology
SC 228 Care and Management of Laboratory Animals
SC 229 Care and Management of Laboratory Animals
SC 234 Marine Biology
SC 236 Marine Zoology

Business
BA 133 Traffic Management I
BA 135 Salesmanship
BA 150 Principles of Insurance
BA 151 Business Mathematics
BA 161 Business Law I
BA 201 Intermediate Accounting I
BA 202 Intermediate Accounting II
BA 203 Cost Accounting
BA 206 Principles of Taxes
BA 212 Production Management
BA 215 Office Management
BA 216 Personnel Management
BA 231 Marketing II
BA 234 Advertising Principles
BA 238 Industrial Purchasing
BA 240 Consumer Behavior
BA 251 Investments
BA 261 Business Law II

Engineering Science*
ES 206 Engineering Circuit Analysis I
ES 207 Engineering Circuit Analysis II
ES 208 Engineering Circuit Analysis Laboratory
ES 211 Engineering Circuit Analysis (Non-EE)
ES 212 Engineering Circuit Analysis Laboratory
ES 213 Mechanics of Deformable Bodies
CH 215 Organic Chemistry
CH 216 Organic Chemistry
PH 154 Modern Physics

Graphic Arts
GA 250 Traffic Management
GA 252 Color Reproduction
GA 254 Photo Offset Printing

Ornamental Horticulture
OH 201 Arboriculture I
OH 204 Herbeaceous Plants II
OH 205 House and Conservatory Plants
OH 206 Landscape Contracts and Specifications
OH 218 Indoor Planting
OH 219 Landscape Construction
OH 223 Plant Breeding
OH 225 Woody Plants
SC 207 Economic Botany
OH 231 Turfgrass Management III

Aircraft Flight Instruments Simulator, Department of Aircraft Operations

* Prerequisites for E. S. Elective must be minimum Grade “C”.
ADVERTISING ART AND DESIGN

Professor Richard M. Schlemmer, Chairman

The advertising business is a growing field, presenting ever increasing opportunities for men and women who have creative and artistic ability. Trained people are needed for such kinds of work as preparing advertising layouts, television commercials, magazine and newspaper illustrations, technical drawings and manuals, book illustrations, fashion illustrations, displays, animations, and many others.

In this curriculum, emphasis is placed on layout and design, and the preparation of drawings for the various methods of reproduction in the graphic arts.

Close contact is maintained with the advertising business, and with our graduates in the field.

Each advertising art student is required to prepare a satisfactory portfolio of his work before graduation.

Typical Employment Opportunities

Art Director
Advertising Artist
Technical Illustrator
Layout Man
Airbrush Artist
Advertising Illustrator
Assistant Art Director

Production Assistant
Display Artist
Book Illustrator
Fashion Artist
Photographer
Photo Retoucher

ADVERTISING ART AND DESIGN

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### Third Semester

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**Total Credits Required: 69**

### Electives

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**Course Descriptions**

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

### Advertising Art and Design

**AA103 ADVERTISING LAYOUT I (2,3) 3 Cr.**

The execution of sketches and comprehensive layouts for newspaper and magazine ads. The development of skill in indicating type and three-dimensional form with chisel-point pencil.

**AA104 ADVERTISING PRODUCTION I (2,3) 3 Cr.**

A study of the reproduction processes used in the graphic arts. The making of mechanicals. Drawings for line and halftone engravings in black-and-white and color.

**AA105 DESIGN FUNDAMENTALS (1,3) 2 Cr.**

The fundamentals of design and designing theory in black-and-white and color.

**AA106 FIGURE ANATOMY (2,3) 3 Cr.**

A study of anatomy as related to the basic structure and ideal proportions of the human figure. Drawings of the head and figure in various action poses.

**AA107 DRAWING FUNDAMENTALS (2,3) 3 Cr.**

The principles of structural drawing, freehand perspective, light and shade, and pictorial composition, applied to landscape subjects and manufactured objects. The technique and use of black and white mediums in commercial art such as pencil and pen-and-ink.

**AA108 MECHANICAL ART (1,3) 2 Cr.**

The use of drawing instruments applied to graphic art. The drawing of geometric figures, charts and graphs, and trade marks, Mechanical Illustration.
AA109 LETTERING (2,3) 3 Cr.
The evolution of the Roman alphabet and the modern styles used in contemporary advertising. A study of typography including the recognition and selection of type. The rendering of type with chisel point pencils.

AA201 COPYWRITING (1,2) 2 Cr.
The copywriter's contribution to advertising. Psychological considerations in the selection of appeals and themes and the preparation of copy for various media. Emphasis on creative writing and its application to advertising problems.

AA202 ADVERTISING PRODUCTION (2,3) 3 Cr.
Organization and procedures for handling production; including scheduling costs, and purchasing problems. The basic principles of photo-engraving, and letterpress, offset, and gravure printing. The preparation of art work for various printing processes. The recognition, selection, and use of type in advertising.

AA203 ADVERTISING LAYOUT II (2,3) 3 Cr.
Advertising and editorial layout including type and figure indication. Professional working procedures in making comprehensives, integrated with discussions on production problems and agency procedures.

AA204 ADVERTISING ILLUSTRATION (2,3) 3 Cr.
Interpretation of the elegance, poise, and dignity of the smartly clothed figure. Drawings of the advertising and fashion figure and merchandise, for wash and color reproduction.

AA207 FIGURE DRAWING I (2,3) 3 Cr.
A study of the draped garment in relation to the underlying figure, and the structure and texture of contemporary costume. The rapid portrayal of figures in pencil and chalk for advertising layouts.

AA209 GRAPHIC DESIGN (2,3) 3 Cr.
The application of the principles of advertising design to a wider range of advertising situations and media, including book jackets, record album covers, direct mail pieces, and posters.

AA210 MERCHANDISE ILLUSTRATION (1,3) 2 Cr.
The preparation of drawings of merchandise for advertising purposes. The drawing and rendering of interiors and objects in perspective. The use of various rendering techniques.

AA211 PHOTO RETOUCHING I (1,6) 3 Cr.
The use of the airbrush in rendering typical basic drawings. Introduction to the retouching of photographic prints of merchandise for advertising reproduction.

AA212 SEMINAR (1,3) 2 Cr.
A study of the business relationships in the advertising art field. Prospecting for employment, working conditions, and prospects for advancement. The preparation and presentation of the portfolio.

AA213 TECHNICAL ILLUSTRATION (2,3) 3 Cr.
The drawing of mechanical and technical subjects for catalog or handbook illustration; orthographic projection, isometric drawings, and mechanical perspective.

AA214 ADVERTISING ART AND DESIGN (1,4) 2 Cr.
Methods and procedures in handling advertising artwork. Practical experience in the application of the fundamental principles of drawing and design to advertising problems.

AA217 INDUSTRIAL DRAWING (2,3) 3 Cr.
The illustration of industrial products in isometric and perspective. The designing and drawing of graphs, charts, and visual aids. Industrial presentations.

AA218 FASHION ILLUSTRATION (2,3) 3 Cr.
The evolution and direction of men’s and women’s fashions. Sketching the fashion figure and the development of sketches required in the fashion industry. Rendering of fashion accessories and men’s furnishings in line and wash.

AA219 PHOTOGRAPHY (1,3) 2 Cr.
The principles of photography, including the use of equipment, lighting, exposure, composition, processing, and enlarging. The use of photography in advertising.
AA220 FIGURE DRAWING II (3,3) 4 Cr.
Drawing of the advertising and fashion figure in wash and color.

AA221 PACKAGE DESIGN (2,3) 3 Cr.
The application of the elements and principles of design to three-dimensional objects. Introduction to packaging and display problems. Label, box, and carton design. Students make sketches, models, and finished drawings.

AA222 ADVERTISING PRODUCTION II (1,3) 2 Cr.
The preparation of drawings for various methods of printing, including offset, rotogravure, and silk screen. Typesetting by hand and machine, photographic processes, paper selection, and estimating.

AA223 OIL PAINTING (1,3) 2 Cr.
Creative work in easel painting with attention given to development of individual approach and style.

AA224 ADVERTISING PROCEDURES (3,3) 4 Cr.
Planning campaign strategy. Determining the advertising appeal. Visualization. Media planning. The complete campaign. The application of product and marketing research.

AA231 COPYWRITING II (3,0) 3 Cr.
Practical problems in writing for a variety of markets and media.
Aviation constitutes an industry that requires large organizations staffed by highly skilled technicians. It is a complex force which is helping to remake our society, economy and world organization. The development and direction of this force toward the attainment of a better life for mankind offers a great challenge to youth.

The aviation industry needs men who possess a wide range of knowledge and ability. For example, in positions of flight control, air carrier operations, airport management, and related governmental capacities, there are found combinations of requirements for which much general education, as well as special technical training, is necessary. The degree of one's leadership in this area depends upon the extent of one's related information and one's degree of technical competence.

This curriculum covers the essential elements that are involved in this highly diversified industry. The program is being continually revised and broadened to include the latest technical and operational developments as effected by this industry.

The flight portion of the Aerospace Program is unique in the Nation in that the students pay no fees for flight training. The College owns seven single engine aircraft, one multi aircraft, five GAT Simulators and is approved by the Federal Aviation Agency for both flight and ground training. Flying is taught by members of the faculty holding Certified Flight Instructor's ratings.

Qualified students may take sufficient flight training in the senior year to qualify them for the private pilot’s license. Students who have enrolled with a private pilot license will be helped to obtain their commercial and instrument rating.

Typical Employment Opportunities

Airways Operations Specialist
Airline Operations
Maintenance

Airport Manager
Aircraft Operations
Flight Dispatcher

AEROSPACE TECHNOLOGY

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AO 100 General Aeronautics</td>
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<td>3</td>
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<tr>
<td>AO 101 Aerodynamics</td>
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<tr>
<td>MA 124 Mathematics</td>
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15  4  17
### Second Semester

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<td>AO 103</td>
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<tr>
<td>AO 104</td>
<td>Aircraft Systems</td>
<td>3</td>
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<tr>
<td>MA 125</td>
<td>Mathematics</td>
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<td>PH 132</td>
<td>Physics</td>
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<td>Introduction to Literature</td>
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Total Credits: 17 | 5 | 19

### Third Semester

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<tr>
<td>AO 201</td>
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<td>AO 202</td>
<td>Aircraft Power Plants</td>
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<tr>
<td>AO 203</td>
<td>Navigation</td>
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<tr>
<td>AO 210</td>
<td>Simulator &amp; Instrument Flight Technique</td>
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</tr>
<tr>
<td>AO 211</td>
<td>Pilot Training (Flight Line)**</td>
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<td>MA 126</td>
<td>Mathematics</td>
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<td>SO —</td>
<td>Social Science</td>
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Total Credits: 17 | 3-6 | 18-19

** Open only to qualified students who receive permission of the Department Chairman.

Students must provide their own transportation to the Flight Line.

### Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

### Aerospace Technology

**AO100 GENERAL AERONAUTICS (3,0) 3 Cr.**
An introductory course covering the aeronautical knowledge essential to private pilots. Course will include FAA requirements for Basic Ground School in Federal Air Regulations; air navigation including radio navigation; meteorology; general service-aircraft and engines; safety practices and procedures.

**AO101 AERODYNAMICS (3,0) 3 Cr.**
Nomenclature of aircraft; aircraft axes and motion about these axes. Problems involving lift and drag to illustrate the change in performance with change in velocity, or weight, or altitude, or wing area. Introduction to high speed flight.

**AO103 AIRPORT PLANNING AND OPERATION (2,0) 2 Cr.**
To analyze those features which make up an airport, including an introductory iden-
tification of navigational aids found at airports. Classification of airports and an understanding of the relationship between airplane performance and airport design problems. Study the growth of air transportation so that consideration can be given to various problems that go into planning and operating an airport.

AO104 AIRCRAFT SYSTEMS (3,4) 4 Cr.
Technical theory of aircraft maintenance, shop procedures, F. A. R., sheet metal, welding, hydraulics, dope and fabric, rigging, aircraft structures, weights and balances. Prerequisite: AO101

AO201 AIRCRAFT ELECTRONICS (3,0) 3 Cr.
Fundamentals of electricity, capacitors and inductors, measuring instruments, batteries, generators, a-c and d-c current, principles of electronics, receivers, transmitters. Prerequisite: PH132

AO202 AIRCRAFT POWER PLANTS (3,4) 4 Cr.
Theory and principles of operation of aircraft reciprocal engines, engine disassembly, assembly, running live engines, and testing. Prerequisite: PH131

AO203 NAVIGATION (3,0) 3 Cr.
Charts, chart projections and their use. Navigational instruments and their use. The use of the slide rule section and wind vector face of the navigational computer for solving various types of dead reckoning problems. Radio navigation bearings and fixes using both low and very high frequency radio aids to navigation. Prerequisite: AO100

AO205 AIR TRAFFIC CONTROL (4,0) 4 Cr.
Radio aids to navigation, radio frequency and procedures. Use of publications; flight information manual; airman's guide; radio facility, approach, and terminal area charts; FAA manual of air traffic control procedures. Prerequisite: AO203

AO206 FLIGHT TECHNIQUE (3,0) 3 Cr.
Aircraft and engine performance. Use of aircraft and engine cruise charts. Methods of cruise control; problems involving flight analysis, flight logs, and How-goz-it charts. Prerequisite: AO202, AO101

AO207 JET PROPULSION (3,0) 3 Cr.
Basic theory of the operation of jet engines. Classifications, identification, jet theory, thrust augmentation, centrifugal flow, axial flow, turbo props, athodyds and after burners. Prerequisite: AO202

AO208 METEOROLOGY (3,0) 3 Cr.
Fundamental physical concepts of meteorology. Meteorological instruments and observations. Teletype sequence and synoptic chart interpretation. Air masses, fronts, fog formation and dissipation, aircraft icing, and thunderstorms. Prerequisite: AO100

AO210 SIMULATOR & INSTRUMENT FLIGHT TECHNIQUE (2,0) 2 Cr.
Fundamental concepts involved in attitude instrument flying lab sessions involve use of GAT 1 simulator and students are taught basic skills needed to qualify as pilot and simulator instructors.

AO211 PILOT TRAINING (Flight Line) (3,3) 1 Cr.
Pre solo and solo training; introduction to elementary maneuvers for private pilot license; A/C used Cessna 150's and Piper Cherokee 140.

AO212 PILOT TRAINING (Flight Line) (3,3) 1 Cr.
Dual and solo flight training; advanced and cross-country phase; final preparatory maneuvers for private pilot license.
tification of navigational aids found at air-
ports. Classification of airports and an un-
derstanding of the relationship between
airplane performance and airport design
problems. Study the growth of air transpor-
tation so that consideration can be given to
various problems that go into planning and
operating an airport.

AO104 AIRCRAFT SYSTEMS (3,4) 4 Cr.
Technical theory of aircraft maintenance,
shop procedures, F. A. R., sheet metal, weld-
ing, hydraulics, dope and fabric, rigging,
aircraft structures, weights and balances.
Prerequisite: AO101

AO201 AIRCRAFT ELECTRONICS (3,0) 3 Cr.
Fundamentals of electricity, capacitators
and inductors, measuring instruments, bat-
teries, generators, a-c and d-c current, prin-
ciples of electronics, receivers, transmitters.
Prerequisite: PH132

AO202 AIRCRAFT POWER PLANTS (3,4) 4 Cr.
Theory and principles of operation of air-
craft reciprocal engines, engine disassembly,
assembly, running live engines, and testing.
Prerequisite: PH131

AO203 NAVIGATION (3,0) 3 Cr.
Charts, chart projections and their use.
Navigational instruments and their use. The
use of the slide rule section and wind vec-
tor face of the navigational computer for
solving various types of dead reckoning
problems. Radio navigation bearings and
fixes using both low and very high fre-
quency radio aids to navigation.
Prerequisite: AO100

AO205 AIR TRAFFIC CONTROL (4,0) 4 Cr.
Radio aids to navigation, radio frequency
and procedures. Use of publications; flight
information manual; airman's guide; radio
facility, approach, and terminal area charts;
FAA manual of air traffic control proce-
dures.
Prerequisite: AO203

AO206 FLIGHT TECHNIQUE (3,0) 3 Cr.
Aircraft and engine performance. Use of
aircraft and engine cruise charts. Methods
of cruise control; problems involving flight
analysis, flight logs, and How-goz-it charts.
Prerequisite: AO202, AO101

AO207 JET PROPULSION (3,0) 3 Cr.
Basic theory of the operation of jet en-
gines. Classifications, identification, jet
theory, thrust augmentation, centrifugal
flow, axial flow, turbo props, athodyds and
after burners.
Prerequisite: AO202

AO208 METEOROLOGY (3,0) 3 Cr.
Fundamental physical concepts of meteoro-
gy. Meteorological instruments and observa-
tions. Teletype sequence and synoptic chart
interpretation. Air masses, fronts, fog for-
formation and dissipation, aircraft icing, and
thunderstorms.
Prerequisite: AO100

AO210 SIMULATOR & INSTRUMENT FLIGHT
TECHNIQUE (2,0) 2 Cr.
Fundamental concepts involved in attitude
instrument flying lab sessions involve use of
GAT 1 simulator and students are taught
basic skills needed to qualify as pilot and
simulator instructors.

AO211 PILOT TRAINING (Flight Line)
(3,3) 1 Cr.
Pre solo and solo training, introduction
to elementary maneuvers for private pilot
license; A/C used Cessna 150's and Piper
Cherokee 140.

AO212 PILOT TRAINING (Flight Line)
(3,3) 1 Cr.
Dual and solo flight training; advanced and
cross-country phase; final preparatory ma-
neuvers for private pilot license.
DIPLOMA PROGRAM IN AEROSPACE SERVICE AIDE*

*Program not offered in September 1971

PROFESSOR ALBERT HRABA, Acting Coordinator

The One-Year Program in Aerospace Service Aide offers unusual opportunities in an exciting career area. Graduates of this program will be prepared with skills and related technical theory in many areas. The aim of the Curriculum is to provide the graduate with the academic background to gain entrance level positions in the Aerospace Industry. The program offers the student the opportunity to obtain practical and theoretical knowledge (this coupled with added study and eighteen months' work experience) to sit for his Powerplant or Airframe license. Successful students will have the opportunity to seek employment, or if they choose, to continue their education in the Aircraft Operations Technology Curriculum for the Associate Degree.

EMPLOYMENT OPPORTUNITIES

The aerospace industry is actively recruiting well trained specialists for its work force. Graduates of this program should be qualified for entry level positions in general aviation, commercial airlines, and manufacturing.

AEROSPACE SERVICE AIDE

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AS 101 Graphics</td>
<td>1 Lab. 3 Class</td>
<td>2</td>
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<tr>
<td>AS 102 Aircraft Welding</td>
<td>1 Lab. 3 Class</td>
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<tr>
<td>AS 103 Aerodynamics</td>
<td>2 Lab. 0 Class</td>
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<tr>
<td>EN 112 Communication Skills</td>
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<td>MA 120 Mathematics</td>
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<td>PE — Physical Education</td>
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<tr>
<th>Second Semester</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>AS 104 Aircraft Structures</td>
<td>2 Lab. 3 Class</td>
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<tr>
<td>AS 105 Aircraft Powerplants (Recip)</td>
<td>2 Lab. 3 Class</td>
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<td>AS 106 Jet Propulsion</td>
<td>3 Lab. 0 Class</td>
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<tr>
<td>SO 101 Introduction to Social Science</td>
<td>3 Lab. 0 Class</td>
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<td>MA 121 Mathematics</td>
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<tr>
<td>Total</td>
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Total Credits: 28
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Aerospace Service Aide

AS101 GRAPHICS (1,3) 2 Cr.
To develop the ability to graphically describe objects, prepare student for aircraft layout, geometric construction, isometric, or the graphic projections.

AS102 AIRCRAFT WELDING (1,3) 2 Cr.
Nomenclature and safety precautions involved in the proper use and care of oxy-acetylene and T.I.G. equipment. Shop practices in the use of equipment. Welding ferous and non-ferrous metals.

AS103 AERODYNAMICS (2,0) 2 Cr.
Provide an understanding of the basic principles of flight, airfoil theory, forces and stresses on aircraft, aircraft performance.

AS104 AIRCRAFT POWERPLANTS (Recip),
(2,2) 3 Cr.
Theory and practice in engine overhaul, aircraft propellers, carburetors, magnetos and ignition, powerplant teardown and assembly.

AS105 AIRCRAFT STRUCTURES (2,3) 3 Cr.
Theory and practice in Aircraft Sheet Metal, Riveting, Layout Assembly and Rigging, Weight and Balance Control.

AS106 JET PROPULSION (3,0) 3 Cr.
Theory course to familiarize the student with the fundamentals of jet propulsion, turbo-jet, turbo-fan, turbo prop engines discussed; components and systems, Brayton Cycle, thrust augmentation, athodyds.
AGRICULTURE

PROFESSOR ROBERT R. STOCKBRIDGE, Chairman

Agriculture in the United States has become highly technical. Agriculture is more than farming, it includes supplying the raw materials and services to farmers before producing, and then taking the production and grading it, packaging, marketing, processing, distributing, transporting products to the consumer in the desired form.

Many businesses basically depend upon agriculture, and the demand for technicians with agricultural knowledge and experience provides many opportunities for employment.

There is a definite trend for many of our graduates to continue their education. Many enter the College of Agriculture at Cornell University, and the Colleges of Agriculture in other states.

AGRONOMY

Agronomy is the art and science of managing farm land. Scientific agricultural planning and production are based upon knowledge of soil, crop and livestock management. In addition, land and water, the greatest natural resources, must be managed wisely for the benefit of present and future generations.

Typical Employment Opportunities

Farmer
Farm Manager
Vegetable and Fruit Inspector
Manager for Farm Equipment Sales and Service
Farm Supply Store Manager
Feed and Fertilizer Salesman
Agricultural Chemical Salesman
Certified Seed Grower
Custom Farm Serviceman
Seed Salesman
Technical Assistant
Research Assistant
Produce Broker

Nematode Research Laboratory

The Laboratory is primarily concerned with research on the golden nematode disease of potatoes. It also conducts studies on other nematodes that attack potatoes, vegetables, and ornamental plants. Cooperative research is conducted with the New York State Department of Agriculture and Markets, United States Department of Agriculture, and the College.
### AGRICULTURE-AGRONOMY (Crop and Soil Science)

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>AG 103</td>
<td>Livestock and Poultry Laboratory</td>
<td>0 4</td>
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<tr>
<td>AG 105</td>
<td>Introductory Animal Science</td>
<td>1 2</td>
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<tr>
<td>AG 107</td>
<td>Soil Science</td>
<td>2 3</td>
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<tr>
<td>AG 110</td>
<td>Tractor Operation and Maintenance†</td>
<td>2 2</td>
<td>3</td>
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<tr>
<td>CH 103</td>
<td>Chemistry</td>
<td>2 2</td>
<td>3</td>
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<td>SC 114</td>
<td>Zoology</td>
<td>2 2</td>
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<tr>
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<td>English Composition</td>
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**First Semester**

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<td>AG 101</td>
<td>Animal Anatomy, Physiology, and Health</td>
<td>2 2</td>
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<td>AG 102</td>
<td>Genetics</td>
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<td>AG 104</td>
<td>Livestock and Poultry Laboratory</td>
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<td>AG 106</td>
<td>Poultry Production and Marketing</td>
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<td>MA 100</td>
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<tr>
<td>SC 104</td>
<td>General Microbiology</td>
<td>2 2</td>
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<td>Introduction to Literature</td>
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**Second Semester**

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<tr>
<td>AG 207</td>
<td>Farm Management Accounting</td>
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<td>AG 209</td>
<td>Fruit Science</td>
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<td>AG 215</td>
<td>Soil Fertility</td>
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<td>PE —</td>
<td>Physical Education</td>
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**Third Semester**

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<td>AG 208</td>
<td>Field Crop Science</td>
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<tr>
<td>AG 214</td>
<td>Soil and Water Conservation</td>
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<td>AG 225</td>
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**Fourth Semester**

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<td>AG 208</td>
<td>Field Crop Science</td>
<td>2 2</td>
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**Total Credits Required:** 70

† Approximate; depending on Elective.
‡ Optional for women students. (Suggest AG 218 Animal Care for First Semester.)
§ AG 108 Livestock and Poultry Practice required of all students during the year. See Course Description.

### ANIMAL SCIENCE

A rapid transition is taking place in Animal Agriculture with an increasing application of science and technology to the production of animal products.
Livestock farming is the leading agricultural enterprise of the nation and New York State. Milk production, processing, and merchandising is New York State’s most important agricultural enterprise.

Technicians are in demand to work closely with the ever increasing number of professional people engaged directly or indirectly in the agriculturally related phases of our economy. To supply the materials of production (feed, seed, chemicals, tractors, farm machinery) and to distribute and market the products of agriculture requires better educated people each year.

The College has a fine herd of purebred, registered dairy cattle, consisting of Holsteins, and Ayrshires. A herd of purebred Angus cattle represents the beef breeds. A few swine and sheep complete the livestock program.

Animal Science deals with the science and principles of the production and processing of livestock and livestock products.

**Typical Employment Opportunities**

- Dairy Farm Owner
- Livestock Breeder
- Dairy Herd Improvement Supervisor
- Dairy Equipment Sales and Serviceman
- Herd Manager
- Livestock Buyer
- Livestock Inspector
- Manager of Dairy Farm
- Foreman, Livestock Breeding Farm
- Meat Inspection
- Feed Salesman
- Manager of Feed Store
- Manager of Farm Supply Store
- Artificial Inseminator (after additional specialized training)
- Technical Assistant: (colleges, laboratories, veterinarians)
- Research Assistant
- Meat Packer Representative

**AGRICULTURE—ANIMAL SCIENCE**

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<td>Livestock and Poultry Laboratory</td>
<td>0 4</td>
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<tr>
<td>AG 105</td>
<td>Introductory Animal Science</td>
<td>1 2</td>
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<tr>
<td>AG 107</td>
<td>Soil Science</td>
<td>2 3</td>
<td>3</td>
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<tr>
<td>AG 110</td>
<td>Tractor Operation and Maintenance‡</td>
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**Second Semester**

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<th>Course</th>
<th>Title</th>
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<tbody>
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<td>Animal Anatomy, Physiology, and Health</td>
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<td>3</td>
</tr>
<tr>
<td>AG 102</td>
<td>Genetics</td>
<td>3 0</td>
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<tr>
<td>AG 104</td>
<td>Livestock and Poultry Laboratory</td>
<td>0 4</td>
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<tr>
<td>AG 106</td>
<td>Poultry Production and Products Marketing</td>
<td>1 3</td>
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</tr>
<tr>
<td>MA 100</td>
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</tr>
<tr>
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<td>Introduction to Literature</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>14 11</td>
<td>18</td>
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</tbody>
</table>
### Poultry Science

The program is designed to provide the student with fundamental training and knowledge in the comparative nutrition, physiology, breeding, selection, and management of various classes of livestock and poultry science as a specialty. An understanding of the role of animal production in the National and world economy will be gained without the danger of overspecialization.

Throughout the first year, assignments to Livestock and Poultry Laboratory bring each student in direct contact with all the major farm animals and many of the crop procedures used with plants utilized for livestock feed. Fruit and vegetable production and marketing laboratories are also included. It is suggested that students work in agriculture, or in a closely related field, during the summer between the freshman and senior year.

### Typical Employment Opportunities

<table>
<thead>
<tr>
<th>Role</th>
<th>Title</th>
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<tbody>
<tr>
<td>Poultry Breeder</td>
<td>Manager of Processing Plant</td>
</tr>
<tr>
<td>Hatchery Operator</td>
<td>Poultry Products Serviceman</td>
</tr>
<tr>
<td>Manager of Egg and Poultry</td>
<td>Feed Company Manager</td>
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<tr>
<td>Cooperative</td>
<td>Feed Salesman</td>
</tr>
<tr>
<td>Egg Farmer</td>
<td>Manager and Owner of Retail Poultry Store</td>
</tr>
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<td>Broiler Grower</td>
<td>Poultry Specialist for Feed Company</td>
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<tr>
<td>Turkey Grower</td>
<td>Supervisor in Processor Plant</td>
</tr>
<tr>
<td>Poultry Products Grader</td>
<td></td>
</tr>
<tr>
<td>and Inspector</td>
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</table>

† Approximate; depending on Elective.
‡ Optional for women students. (Suggest AG 218 Animal Care for First Semester.)
§ AG 108 Livestock and Poultry Practices required of all students during the year. See Course Description.
# AGRICULTURE—POULTRY SCIENCE

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<tr>
<th>First Semester</th>
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<tr>
<td><strong>AG 103</strong> Livestock and Poultry Laboratory</td>
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<td><strong>AG 105</strong> Introductory Animal Science</td>
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<td><strong>AG 107</strong> Soil Science</td>
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<td><strong>AG 110</strong> Tractor Operation and Maintenance‡</td>
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<tr>
<td><strong>CH 103</strong> Chemistry</td>
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<td><strong>SC 114</strong> Zoology</td>
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<td><strong>EN 100</strong> English Composition</td>
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<th>Credit Hours</th>
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<tr>
<td><strong>AG 101</strong> Animal Anatomy, Physiology, and Health</td>
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<tr>
<td><strong>AG 102</strong> Genetics</td>
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</tr>
<tr>
<td><strong>AG 104</strong> Livestock and Poultry Laboratory</td>
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</tr>
<tr>
<td><strong>AG 106</strong> Poultry Production and Marketing</td>
<td>1 3</td>
<td>2</td>
</tr>
<tr>
<td><strong>MA 100</strong> Mathematics</td>
<td>3 0</td>
<td>3</td>
</tr>
<tr>
<td><strong>SC 104</strong> General Microbiology</td>
<td>2 2</td>
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<tr>
<td><strong>EN 101</strong> Introduction to Literature</td>
<td>14 11</td>
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<th>Third Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tr>
<td><strong>AG 207</strong> Farm Management Accounting</td>
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<tr>
<td><strong>AG 210</strong> Agricultural Construction and Mechanization‡</td>
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<td>3</td>
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<tr>
<td><strong>PE —</strong> Physical Education</td>
<td>0 2</td>
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</tr>
<tr>
<td><strong>SO —</strong> Social Science*</td>
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<td>6</td>
</tr>
<tr>
<td><strong>Elective</strong></td>
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<td>4</td>
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<td><strong>Total</strong></td>
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<table>
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<tr>
<th>Fourth Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>AG 202</strong> Comparative Animal Genetics</td>
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<tr>
<td><strong>AG 211</strong> Animal Nutrition</td>
<td>2 2</td>
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</tr>
<tr>
<td><strong>AG 213</strong> Poultry Physiology and Health</td>
<td>2 2</td>
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</tr>
<tr>
<td><strong>PE —</strong> Physical Education</td>
<td>0 2</td>
<td>1</td>
</tr>
<tr>
<td><strong>SO —</strong> Social Science*</td>
<td>3 0</td>
<td>3</td>
</tr>
<tr>
<td><strong>Elective</strong></td>
<td>3† 0</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12 8</td>
<td>16</td>
</tr>
</tbody>
</table>

* Please see index for information about General Education courses.
† Approximate; depending on Elective.
‡ Optional for women students. (Suggest AG 218 Animal Care for First Semester.)
§ AG 108 Livestock and Poultry Practice required of all students during the year. See Course Description.

Total Credits Required: **69**
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

**AGRICULTURE**

**AG101 ANIMAL ANATOMY, PHYSIOLOGY, AND HEALTH (2,2) 3 Cr.**
Anatomy and physiology as a background for disease treatment and control. The normal function of the organs and systems of the body. Symptoms, causes, and preventive treatment of common ailments of animals.

**AG102 GENETICS (3,0) 3 Cr.**
The principles of inheritance in plants and animals. The biological implications of genetics, in terms of the interplay of the effects of heredity units and environment, as a foundation for applied genetics.

**AG103, AG104 LIVESTOCK AND POULTRY (0,4) 1 Cr. each**
Students must attain minimum standards of proficiency in this laboratory. Experience in operating farm machinery and equipment, preparing land for planting, caring for growing crops, harvesting grains, vegetables, and fruit, hauling, storing, and mixing feed. Practice using fertilizer lime, and weed controls. The grading, storing, and marketing of farm products.

**AG105 INTRODUCTORY ANIMAL SCIENCE (1,2) 2 Cr.**
The common breeds of farm animals and poultry; their care and management. The economic importance of livestock and poultry in the agriculture of the State and Nation.

**AG106 POULTRY PRODUCTION AND MARKETING (1,3) 2 Cr.**

**AG107 SOIL SCIENCE (2,3) 3 Cr.**
The origin, formation, and chemical properties of soil. Soil texture, drainage, tillage, fertility, and the use of fertilizer, lime, and farm manure related to the growing of plants.

**AG108 LIVESTOCK AND POULTRY PRACTICE (6,4) 1 Cr.**
Alternating schedules in the care of livestock and poultry to acquire experience and skills. Some weekend experience will be required. Students must attain minimum standards of proficiency.

**AG110 TRACTOR OPERATION AND MAINTENANCE (2,2) 3 Cr.**
Types of farm tractors, their selection, operation, maintenance and “tune-up”; basic engine and power transmission theory.

**AG201 AGRICULTURAL ECONOMICS (3,0) 3 Cr.**
The fundamental basic principles and relationships in the production, distribution and consumption of agricultural goods and services with particular application to Northeastern U.S. and New York State agriculture. Price levels, the price-income structure of agriculture, the role farm prices play and how they are determined, government and agriculture, agricultural cooperatives and the changing structure of farm markets. Students follow agricultural economics in the press and present a paper of some length showing their opinions and grasp of agricultural economics.

**AG202 COMPARATIVE ANIMAL GENETICS (2,2) 3 Cr.**
The basic principles of livestock breeding including poultry. Problems of practical and economic importance of livestock and poultry breeders are considered, including artificial insemination, conversion factors, sire indices, testing methods, costs and production records. The College herds and flocks serve as practical examples.

**AG203 BEEF CATTLE MANAGEMENT (2,0) 2 Cr.**
The place of beef cattle in New York State. Characteristics of the major breeds; selection of stock; feeding and management problems. Work with the College Angus herd.
AG204 DAIRY BARN MANAGEMENT  
(2,0) 2 Cr.
Practical experience with the College dairy herd. Herd management, feeding, breeding, and ailments. Offered in the third and fourth semesters.

AG205 DAIRY CATTLE MANAGEMENT  
(2,2) 3 Cr.
Selection of the dairy farm, history and development of the dairy breeds, selection of stock, raising calves and young stock, selection and care of herd sires, feeding and management problems, disease control and housing.

AG206 DAIRY SCIENCE (1,3) 2 Cr.
The scientific, technical, and sanitary aspects of fluid milk production, including milk and its relation to public health, dairy barn scoring, and milk price plans. The composition and physical properties of milk, quantitative tests for butterfat, acidity, and solids. Students satisfactorily completing this course are eligible to take the examination for the New York State Tester's License.

AG207 FARM MANAGEMENT ACCOUNTING  
(2,2) 3 Cr.
Complete business records as needed for the effective management of the agricultural business. The principles and practices of business accounting; basic fundamentals, books of original entry, special columnar journals, ledgers, worksheets, statements, and adjusting and closing of accounts. Farm inventories. Social security and income tax returns.

AG208 FIELD CROP SCIENCE (2,2) 3 Cr.
Field crops in the Northeast; cropping systems related to soils, types of farming, and environment; management procedures, balance of enterprises, conservation programs, pest control, and fertility.

AG209 FRUIT SCIENCE (2,3) 3 Cr.
The principles of growing trees and small fruits in the Northeast. The selection of plants, cultural practices in growing the crop to maturity, the control of insects and diseases. The study of varieties important to the Northeast. Propagation, pollination, tree nutrition, harvesting, grading, packaging, storing, and marketing.

AG210 AGRICULTURAL CONSTRUCTION AND MECHANIZATION (2,3) 3 Cr.
Trends in livestock housing; economies of construction and efficiency. Farm location, farmstead planning, construction problems and techniques; materials, ventilation, and electrical facilities. The selection and maintenance of equipment and labor saving devices.

AG211 ANIMAL NUTRITION (2,2) 3 Cr.
The proper nutrition of livestock including poultry. The sources of nutrients. Economical feed formulation, feed efficiency, and feeding practice.

AG212 MEAT AND MEAT PRODUCTS (1,3) 2 Cr.
Meat as a food, and the processing of meat animals of several classes and species. Antemortem and post mortem examination. Federal and New York State meat inspection, refrigeration, and preservation of meats and meat products. Composition of meat, its vitamin content, and how to recognize the better grades as well as species and age of animal involved. The gross anatomy and physiology of the animals processed.

AG213 POULTRY, PHYSIOLOGY AND HEALTH (2,2) 3 Cr.
Building an effective barrier against poultry diseases, and insuring good health: principles of disease and parasite prevention and control.

AG214 SOIL AND WATER CONSERVATION (2,3) 3 Cr.
The principles and methods of making accurate measurements and calculating land areas and elevation, as related to soil erosion controls and water conservation practices. Factors contributing to soil and water losses and vegetative and engineering practices involved in control measures.

AG215 SOIL FERTILITY (2,3) 3 Cr.
Plant nutrient needs, including the role of minor elements, for various crops. Constituents, ratios, and methods of mixing fertilizers. Soil tests for plant nutrients, fertilizer requirements, and recommendations correlated with the tests. Building and maintaining soil productivity.
AG216 VEGETABLE PRODUCTION (1,2) 2 Cr.
The fundamentals of gardening, preparing the soil, planting, cultivating, and harvesting. Dusting and spraying for insect and disease control.

AG217 FRUIT AND VEGETABLE CULTURE (2,2) 3 Cr.
The basic principles and practices in growing vegetables, trees and small fruits, soil preparation, selection of varieties, planting, cultivating, insect and disease control, harvesting, grading, and packaging.

AG218 ANIMAL CARE (2,2) 3 Cr.
The fundamentals of large pet and laboratory animal care. Management, nutrition, disease, handling and assisting in treatment and surgery are considered. Blood and milk sample collection and records for the field, animal hospital, and laboratory are kept and discussed.

AG220 LABORATORY ANIMAL PATHOLOGY (2,2) 3 Cr.
Diseases of laboratory animals, their nature, cause, prevention, and treatment.

AG221 METAL WORK (1,2) 2 Cr.
Theory and practical application of electric arc and oxy-acetylene welding. Cutting, shaping, drilling, tapping, threading, riveting, soldering, plumbing, and sharpening of edge tools. Identification of metals and their uses.

AG225 FARM MACHINERY (2,3) 3 Cr.
Selection, field operation, maintenance, and repair of basic, commonly used farm implements such as plows, harrows, drills, seeders, planters, cultivators, and harvesting machinery with emphasis on efficiency and economy in use. A comparison of different makes of machinery, choosing sizes suitable for the power available; combination of field operations to secure proper tractor load; characteristics of materials, ordering repairs, lubrication, bearing construction, and other subjects related to the selection and purchase of equipment. Field operation problems involving the numerous units of the College farms.
AG216 VEGETABLE PRODUCTION  (1,2)  2 Cr.
The fundamentals of gardening, preparing the soil, planting, cultivating, and harvesting. Dusting and spraying for insect and disease control.

AG217 FRUIT AND VEGETABLE CULTURE  
(2,2)  3 Cr.
The basic principles and practices in growing vegetables, trees and small fruits, soil preparation, selection of varieties, planting, cultivating, insect and disease control, harvesting, grading, and packaging.

AG218 ANIMAL CARE  (2,2)  3 Cr.
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(2,2)  3 Cr.
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AG221 METAL WORK  (1,2)  2 Cr.
Theory and practical application of electric arc and oxy-acetylene welding. Cutting, shaping, drilling, tapping, threading, riveting, soldering, plumbing, and sharpening of edge tools. Identification of metals and their uses.

AG225 FARM MACHINERY  (2,3)  3 Cr.
Selection, field operation, maintenance, and repair of basic, commonly used farm implements such as plows, harrows, drills, seeders, planters, cultivators, and harvesting machinery with emphasis on efficiency and economy in use. A comparison of different makes of machinery, choosing sizes suitable for the power available; combination of field operations to secure proper tractor load; characteristics of materials, ordering repairs, lubrication, bearing construction, and other subjects related to the selection and purchase of equipment. Field operation problems involving the numerous units of the College farms.
AIR CONDITIONING TECHNOLOGY

PROFESSOR FRANK PYNE, Chairman

The control of comfort through the science of environment engineering has become one of our greatest industries. The demand for technicians in this field outstrips the supply many times. This program is among the most promising for those seeking to enter an industry which will increase with today's expanding population and building boom.

The field is particularly interesting for those desiring to own their own business, either in maintenance, design, or construction of air conditioning and heating facilities. Large consulting and construction engineering concerns, with world-wide operations, also have demands for these graduates. The modernization of older buildings and construction of new apartment buildings, stores, and factories in this area assures a continuing supply of employment opportunities.

This program of instruction is built around a strong core of general studies which includes English, Social Sciences, Mathematics, and Physical Science. This background is given the student to insure his ability to understand technological changes which come about as the advancement of scientific frontiers takes place.

The program of technical specialties is based upon knowledge gained from our graduates in the field, advice from industrial advisors, and criteria set by accrediting engineering societies. Well-equipped laboratories are used for exercise of the knowledge gained in the basic classroom studies. Complete air-conditioning and heating systems are designed using standard equipment and construction methods.

Typical Employment Opportunities

Owner or Manager of Business: Sales Engineer
Refrigeration, Heating and/or Controls Technician
Air Conditioning Manufacturer's Representative
Sales Manager Estimator
Installation Supervisor Design Draftsman
Service Manager Test Technician
Systems Designer Field Engineer

AIR CONDITIONING TECHNOLOGY

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AC 101 Electricity</td>
<td>2</td>
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<td>MA — Mathematics†</td>
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<td>MT 102 Graphics</td>
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<td>MT 103 Manufacturing Processes</td>
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<td>PH — Physics†</td>
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<td>EN 100 English Composition</td>
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### Second Semester

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<td>Air Conditioning Equipment I</td>
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<td>AC 103</td>
<td>Thermodynamics</td>
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<td>EN 101</td>
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### Third Semester

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<td>Air Conditioning Equipment II</td>
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<td>AC 202</td>
<td>Air Conditioning Principles I</td>
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<td>AC 204</td>
<td>Heating Principles</td>
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### Fourth Semester

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<tbody>
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<td>AC 206</td>
<td>Air Conditioning Principles II</td>
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<td>AC 207</td>
<td>Control Instruments</td>
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<td>AC 208</td>
<td>Engineering Measurements</td>
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<td>AC 210</td>
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**Total Credits Required: 69**

† Depending on High School Mathematics and Science Achievement. Students may elect: MA 120, 121 or MA 124, 125, 126. PH 101, 102 or PH 131, 132

### Course Descriptions

*Numbers in parentheses indicate lecture and laboratory hours per week respectively.*

**AIR CONDITIONING TECHNOLOGY**

**AC101 ELECTRICITY (2,3) 3 Cr.**


**AC102 AIR CONDITIONING EQUIPMENT I (2,6) 4 Cr.**


Prerequisite: AC101

**AC103 THERMODYNAMICS (3,0) 3 Cr.**


Prerequisite: MA120
AC201 AIR CONDITIONING EQUIPMENT II  
(1,3) 2 Cr.
Prerequisite: AC102

AC202 AIR CONDITIONING PRINCIPLES I  
(4,0) 4 Cr.

AC204 HEATING PRINCIPLES  
(3,0) 3 Cr.

AC206 AIR CONDITIONING PRINCIPLES II  
(3,0) 3 Cr.
Compressors, evaporators, water conservation equipment, heat pumps, absorption systems, refrigerant pipe sizing. 
Prerequisite: AC202

AC207 CONTROL INSTRUMENTS  
(2,3) 3 Cr.
Fundamentals of measurement and control. Electric, electronic, and pneumatic control systems. Control of residential, commercial, and industrial air conditioning and heating systems. Zone control. 
Prerequisite: AC201, AC211

AC208 ENGINEERING MEASUREMENTS  
(1,3) 2 Cr.
Fundamental engineering measurements of pressure, temperature, time, speed, power, and fluid flow. Performance tests on centrifugal fans, air distribution systems, pumps, refrigeration systems, and heating systems. 
Prerequisites: AC103, AC201

AC210 SYSTEMS DESIGN  
(2,6) 4 Cr.
Air Distribution systems, fans, filters, sound control. Design and layout of steam heating systems, hot water heating systems and year-round air conditioning systems. 
Prerequisites: AC204, AC206

AC211 HEATING EQUIPMENT  
(1,3) 2 Cr.
A study and analysis of residential commercial, and industrial steam, hot water, and warm air heating systems. Equipment installation, maintenance, and analysis of service problems. Control systems. High pressure and low pressure oil burners, gas burners, and combustion testing. 
Prerequisite: AC101.
DIPLOMA PROGRAM IN AUDIO-VISUAL COMMUNICATION*

*Program not offered in September 1971

PROFESSOR R. C. BOWMAN, COORDINATOR

The proposed program in Audio-Visual Communications will prepare students to fill an important and urgent need for technically qualified specialists in audio-visual devices and services. The increasing complexity of all types of audio-visual equipment, as well as the increased numbers of new applications of this form of communications, has re-emphasized the necessity of including a trained specialist on the staff of most organizations.

The curriculum in Audio-Visual Communications has been designed to prepare the student with skills and knowledge in many areas. He will not only learn to maintain and repair most audio-visual devices, but also to assist in coordinating the visual communications services within a system or organization. He will learn to establish programs of preventive maintenance: to maintain records of the A/V activities; to stock parts and supplies: to help procure and distribute commercial A/V materials; to coordinate and distribute the available equipment; to act as operator of complex devices; to teach others to operate simple devices; to aid in the selection and ordering of new equipment to produce or assist in the production of special locally-produced projectuals, simple motion pictures, displays, and other audio visual materials such as slides, filmstrips, flip-charts, language laboratory tapes, teaching machine materials plus certain work with closed circuit TV equipment.

Typical Employment Opportunities

AUDIO VISUAL TECHNICIAN

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>AV 101 A/V Equipment I</td>
<td>2 Class, 4 Lab.</td>
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<tr>
<td>AV 102 Visual Comm Tech.</td>
<td>2 Class, 3 Lab.</td>
<td>3</td>
</tr>
<tr>
<td>AV 103 Electrical Sys.</td>
<td>2 Class, 3 Lab.</td>
<td>3</td>
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<tr>
<td>EN 112 Comm Skills</td>
<td>3 Class, 0 Lab.</td>
<td>3</td>
</tr>
<tr>
<td>MA 120 Mathematics</td>
<td>3 Class, 0 Lab.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>12 Class, 10 Lab.</td>
<td>15</td>
</tr>
</tbody>
</table>
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Audio-Visual Communication

AV101 AUDIOVISUAL EQUIPMENT I
(2,4) 3 Cr.
(Mechanical Principles) In this first course in Audiovisual equipment the mechanical aspects of maintenance, repair and operation of these devices will be explored. Students will be expected to acquire a high degree of proficiency both in the operating skills and the correction routine mechanical malfunctions in a wide range of specialized equipment.

AV102 VISUAL COMMUNICATIONS TECHNIQUES I (2,3) 3 Cr.
A study of the basic theoretical and practical aspects of visual communications. Here the student will not only develop an appreciation for the special values of visually oriented communications, but he will also begin the first phase of the skills development required to convert ideas to visual images. Flip Charts, Displays, Multi-layer Diazo Projectuals, Photography and other visual communications materials will be introduced.

AV103 ELECTRICAL FUNDAMENTALS
(2,3) 3 Cr.
Material covered in this course includes electrical terminology and definitions; instruments used in the measurement of electrical quantities; electrical construction, assembly and soldering techniques; the 110v A.C. powersource with related safety procedures; a general study of electrical motors commonly used in audio and visual equipment plus the related preventive maintenance procedures.

AV104 ELECTRICAL CIRCUITS (2,3) 3 Cr.
In this course D.C. power sources will be introduced including; battery supplies, rectifier circuits, D.C. to A.C. and D.C. to D.C. Ohm's Law, as applied to both series and parallel circuits. Checking and replacement of electron tubes and transistors.

AV105 AUDIOVISUAL EQUIPMENT II
(2,4) 3 Cr.
(Electrical Principles) This second course in Audiovisual equipment the electrical and electro-mechanical aspects of maintenance, repair and operation of these devices will be studied. In addition to the equipment previously introduced, the student will have some opportunity to work with teaching machines and their response systems, video tape recording equipment and Closed Circuit TV equipment.

AV106 VISUAL COMMUNICATIONS TECHNIQUES II (2,3) 3 Cr.
A continuation and expansion of materials covered in AV 102. In the production of audiovisual materials more advanced and complex procedures will be undertaken including special copy techniques, black & white and color slide-series production, filmstrip production, and the principles of super 8 mm and 16 mm cinematography. Planning for production of materials, establishing and operating preventive maintenance programs and methods of evaluating selecting and ordering AV equipment and supplies, will serve as the basis for the lecture aspects of the course.
The objective of this program is to prepare technicians who will have a thorough understanding of mechanics and machines.

The automotive industry provides employment for many graduates in the sales, service, and experimental development of gasoline, diesel, and gas turbine powered equipment.

The technical courses are automotive oriented. However, the components of the automobile are analyzed for their principles of operation as well as for their functions.

Thus having a comprehension of the fundamentals of mechanical devices, there is available to graduates a variety of opportunities in the many applications of mechanical, electrical, and fluid power.

The department is dedicated to assisting students in developing a thirst for knowledge, professional ethics, a sense of responsibility and a respect for the dignity of their fellowmen.

Typical Employment Opportunities

Automotive Diagnostician
Warranty Processor
Sales and Service Engineer-
Automotive and Diesel
Research and Development
Technician

Service Instructor
Insurance Underwriter and Adjuster
Equipment Design and Installation
Industrial Processes Engineering
Writer—Technical Literature
Dealership: Parts, Sales, and Service

AUTOMOTIVE TECHNOLOGY

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT 102 Mechanical Power Equipment</td>
<td>2 Class, 4 Lab</td>
<td>3</td>
</tr>
<tr>
<td>AT 104 Combustion Engines</td>
<td>2 Class, 0 Lab</td>
<td>2</td>
</tr>
<tr>
<td>MA 124 Mathematics</td>
<td>3 Class, 0 Lab</td>
<td>3</td>
</tr>
<tr>
<td>MT 102 Graphics</td>
<td>1 Class, 3 Lab</td>
<td>2</td>
</tr>
<tr>
<td>PH 131 Physics</td>
<td>3 Class, 2 Lab</td>
<td>4</td>
</tr>
<tr>
<td>EN 100 English Composition</td>
<td>3 Class, 0 Lab</td>
<td>3</td>
</tr>
<tr>
<td>PE — Physical Education</td>
<td>0 Class, 2 Lab</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>14 Class, 11 Lab</td>
<td>18</td>
</tr>
</tbody>
</table>
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Automotive Technology

AT100 ENGINEERING MATERIALS (2,0) 2 Cr.
A developmental course covering the manufacture, physical properties, and characteristics of both metallic and non-metallic engineering materials. Methods and testing standards of these materials will be examined and demonstrated. The course format provides the developmental student with assignments requiring orientation and utilization of the available college facilities.

AT102 MECHANICAL POWER EQUIPMENT (2,4) 3 Cr.
Operation and maintenance of motive power. Theory of steering systems, differentials, clutches, torque multiplication mechanisms, couplings, and power transmitting equipment. Rebuilding, repairs, and adjustment projects.

AT103 MECHANICAL POWER EQUIPMENT (1,6) 3 Cr.

AT104 COMBUSTION ENGINES (2,0) 2 Cr.
Introduce heat engine types, construction arrangements, and operating cycles. Engine-vehicle performance parameters, group and individual problem solving. Effects of gasoline engine design on performance and combustion requirements.
AT105 COMBUSTION ENGINES (1,2) 2 Cr.
Gasoline engine fuel requirements and carburetor systems analysis. Thermodynamic laws and applications to heat engine and refrigeration cycles.

AT106 ENGINEERING MATERIALS (3,3) 4 Cr.
Chemical and physical properties, methods of production, and utilization of industrial materials. Forging, casting, and welding. Physical tests and heat treatment. Projects in the use and care of hand tools for bench layout operations.

AT204 ELECTRICITY (2,3) 3 Cr.

AT205 ELECTRICITY (2,3) 3 Cr.

AT207 POWER TRANSMISSION (2,3) 3 Cr.
Fluid type drive and transmission. Automotive hydraulic devices and their servo controls. Application of the principles of the planetary gear systems and conversion of fluid energy in the study of a wide variety of automatic transmissions.

AT210 WELDING (1,2) 2 Cr.
Theory and practical application of electric arc welding; cutting, welding, and brazing with oxy-acetylene.

AT212 MACHINERY MARKETING (3,0) 3 Cr.
Channels of distribution; the dealership, its location and building requirements, organizational structure, financing, insurance, and legal aspects; selecting, training, and compensating personnel; accounting and general management.

AT213 SENIOR SEMINAR (1,0) 1 Cr.
Performance of an extensive, Faculty approved, research and/or construction, curriculum related project; submitting preliminary, progress, and final technical written reports and the presentation of a formal oral report.

AT214 COMBUSTION ENGINES (1,2) 2 Cr.
Study and analyze the balancing and dampening of forces and motions of linear and torsional vibration. Laboratory analysis of current diesel solid fuel injection pumps and nozzles. Diesel combustion process with respect to injection and ignition. Combustion chamber design with regard to air distribution versus reaction kinetics theory. Prerequisite: AT105.

AT215 DIESEL ENGINES (3,3) 4 Cr.
Design and performance characteristics of piston, vane roots, Lysholm, centrifugal, axial, and Comprex diesel engine blowers and compressors. Engine governing systems, including isochronous types and paralleling of diesel generator sets. Diesel engine starters and starting procedures. Free piston and gas turbine engine design, performance, and control characteristics. Prerequisite: AT214.

AT216 ENGINEERING MEASUREMENTS (2,3) 3 Cr.
Industrial type testing and reporting of pressure, temperature, speed, time, fluid flow, fuels and lubricants tests, and heat engine performance characteristics. Prerequisite: MP105.

AT217 APPLIED MECHANICS (2,2) 3 Cr.
Motion, velocity, and acceleration analysis of kinematic linkages. Basic static fluid principles and devices as used in power equipment for steering, brakes, transmissions, governors, and other auxiliary servo units.
BIOLOGICAL TECHNOLOGY

DR. LOUIS PYENSON, Chairman

Basic cultural and science courses comprise the first year. Specialization in specific biological fields are offered in the second year through the selection of any one of several options or elective sequences.

Expanding research is producing many new drugs, toiletries, food additives, pesticides, growth stimulants, sterilants, and other compounds potentially valuable in public health, grooming, biology, nutrition, agriculture, and horticulture. Evaluation of those compounds on humans, animals or plants in research laboratories is essential before they can be approved for marketing.

In other areas, our increasing population is requiring the expansion of public health and medical services, the preservation and greater utilization of land, marine and fresh water resources, and the prevention and control of environmental pollution.

These evolutions have created additional demands for technically educated men and women in research and development activities, diagnostic and advisory services, and in sales.

To prepare students for careers in these fields, the Biology Science Department provides the following senior year options: Biological Research Technology, Pest Control Technology, Oceanic Biological Technology, and Laboratory Animal Research Technology.*

Typical Employment Opportunities

- Biological Aide
- Laboratory Technician
- Research Assistant
- Junior Biologist
- Pesticide Salesman
- Custom Spray Operator
- Pest Control Operator
- Public Health Inspector
- Environmental Control Technician
- Marine Laboratory Technician
- Horticultural Research Technician
- State Horticultural Inspector
- Pesticide Screening Research Technician
- Medical Laboratory Research Technician
- College Laboratory Assistant
- Laboratory Animal Research Technician

* Near the end of the second semester a choice of one of the senior-year options (and elective sequences) must be made for the Senior Year.
# BIOLOGICAL TECHNOLOGY

## First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SC 136</td>
<td>Botany</td>
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<td>4</td>
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<tr>
<td>SC 137</td>
<td>Zoology</td>
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<td>4</td>
</tr>
<tr>
<td>CH 107</td>
<td>General Chemistry</td>
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<td>4</td>
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<tr>
<td>MA 105</td>
<td>College Algebra</td>
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<tr>
<td>EN 100</td>
<td>English Composition</td>
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<td>3</td>
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<td>PE —</td>
<td>Physical Education</td>
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## Second Semester

<table>
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<th>Course Code</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>SC 108</td>
<td>Entomology or SC 225 Parasitology*</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 115</td>
<td>Plant Physiology or</td>
<td>2</td>
<td>3</td>
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<tr>
<td>SC 105</td>
<td>Anatomy and Physiology</td>
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<td>4</td>
</tr>
<tr>
<td>MA 110</td>
<td>Statistics</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>CH 110</td>
<td>Introduction to Organic Chemistry</td>
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<td>4</td>
</tr>
<tr>
<td>EN 101</td>
<td>Introduction to Literature</td>
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<td>PE —</td>
<td>Physical Education</td>
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<td>1</td>
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<td></td>
<td><strong>Total</strong></td>
<td>13 or 14</td>
<td>17 or 18</td>
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</table>

**BIOLOGICAL RESEARCH TECHNOLOGY—OPTION**

This option offers a broad spectrum of biological specialties for students who are interested in research and desire positions in various types of biological screening or research laboratories.

## Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC 104</td>
<td>General Microbiology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 201</td>
<td>Medical Entomology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 202</td>
<td>Microtechnique</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>SC 203</td>
<td>Biological Instrumentation</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SO —</td>
<td>Social Science</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Technical Elective***</td>
<td>2+</td>
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<td><strong>Total</strong></td>
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<td>17 or 18</td>
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## Fourth Semester

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SC 205</td>
<td>Mycology and Plant Pathology or</td>
<td>2+</td>
<td>3 or 4</td>
</tr>
<tr>
<td></td>
<td>Technical Elective***</td>
<td>3+</td>
<td>3 or 4</td>
</tr>
<tr>
<td>SC 206</td>
<td>Research Procedures</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SC 217</td>
<td>Biology Seminar</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CH 204</td>
<td>Biochemistry</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>SO —</td>
<td>Social Science</td>
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<td>6</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
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<td>16 or 17</td>
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</table>

**Total Credits Required: 69 to 72**

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*** Please see Technical Elective sequences on following pages.
* Approximate depending on technical elective.
* Laboratory Animal Research Technology Students only.
## TECHNICAL ELECTIVE SEQUENCES*

(For Biological Research Technology Third and Fourth Semesters)

For those students interested in employment with municipal, state, Federal or private agencies concerned with the important field of water, soil or air pollution prevention and control, the department recommends:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC 241</td>
<td>Environmental Protection I</td>
<td>3 0 3</td>
</tr>
<tr>
<td>SC 223</td>
<td>Principles of Ecology**</td>
<td>2 3 3</td>
</tr>
<tr>
<td>SC 242</td>
<td>Environmental Protection II</td>
<td>3 0 3</td>
</tr>
</tbody>
</table>

For those students interested in macro and micro photographic reproduction and recording in hospital, medical or biological research laboratories, the department recommends:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT 220</td>
<td>Biological Photography I</td>
<td>3 3 4</td>
</tr>
<tr>
<td>PT 221</td>
<td>Biological Photography II</td>
<td>3 3 4</td>
</tr>
</tbody>
</table>

* A technical elective sequence will be offered only when the number of students selecting it is sufficient.

** May be taken in place of SC 202 Microtechnique.

### PEST CONTROL—OPTION

This elective sequence is offered for those students interested in pest control and who prefer positions in structural pest control, horticultural or agricultural pest control research or services as indicated under Typical Employment Opportunities.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
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</thead>
<tbody>
<tr>
<td>SO — Social Science</td>
<td></td>
<td>3 0 3</td>
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<tr>
<td>SC 201</td>
<td>Medical Entomology</td>
<td>2 2 3</td>
</tr>
<tr>
<td>SC 223</td>
<td>Principles of Ecology</td>
<td>2 3 3</td>
</tr>
<tr>
<td>SC 237</td>
<td>Pesticides</td>
<td>3 0 3</td>
</tr>
<tr>
<td>SC 212</td>
<td>Weeds and Their Control</td>
<td>2 2 3</td>
</tr>
<tr>
<td>OH 231</td>
<td>Turfgrass Management or Technical Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 9 18</td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO — Social Science</td>
<td></td>
<td>6 0 6</td>
</tr>
<tr>
<td>SC 205</td>
<td>Mycology and Plant Pathology</td>
<td>2 3 3</td>
</tr>
<tr>
<td>SC 238</td>
<td>Industrial Pest Control</td>
<td>2 3 3</td>
</tr>
<tr>
<td>SC 217</td>
<td>Biology Seminar</td>
<td>0 2 1</td>
</tr>
<tr>
<td>SC 208</td>
<td>Field Research Procedure</td>
<td>1 6 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 14 16</td>
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</tbody>
</table>

Total Credits Acquired: 67
**OCEANOLOGY—OPTION**

This major is recommended for those students interested in employment in the expanding marine industrial, educational, and research enterprises.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC 104</td>
<td>General Microbiology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 202</td>
<td>Microtechnique</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>SC 203</td>
<td>Biological Instrumentation</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SC 236</td>
<td>Marine Zoology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 234</td>
<td>Marine Botany</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SO</td>
<td>Social Science</td>
<td>3</td>
<td>3</td>
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</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC 206</td>
<td>Research Procedures</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SC 217</td>
<td>Biology Seminar</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>SC 221</td>
<td>Introduction to Oceanography</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>CH 204</td>
<td>Biochemistry</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>SO</td>
<td>Social Science</td>
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**Fourth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>SC 110</td>
<td>Medical Microbiology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 202</td>
<td>Microtechnique</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>SC 203</td>
<td>Biological Instrumentation</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>AG 220</td>
<td>Laboratory Animal Pathology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 228</td>
<td>Care &amp; Management of Lab. Animals I</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SO</td>
<td>Social Science</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**LABORATORY ANIMAL MANAGEMENT TECHNOLOGY—OPTION**

This elective option is offered to those students interested in the breeding, care, and manipulation of laboratory animals used in research and diagnostic studies in medical, pharmaceutical, hospital and various other types of biological laboratories.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC 104</td>
<td>General Microbiology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 202</td>
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<td>3</td>
</tr>
<tr>
<td>SC 203</td>
<td>Biological Instrumentation</td>
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<td>2</td>
</tr>
<tr>
<td>SC 236</td>
<td>Marine Zoology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 234</td>
<td>Marine Botany</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SO</td>
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**Third Semester**

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
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<td>Research Procedures</td>
<td>1</td>
<td>2</td>
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<tr>
<td>SC 217</td>
<td>Biology Seminar</td>
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<td>SC 221</td>
<td>Introduction to Oceanography</td>
<td>2</td>
<td>3</td>
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**Fourth Semester**

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<th>Course Title</th>
<th>Hours per Week</th>
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</thead>
<tbody>
<tr>
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<td>Medical Microbiology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SC 202</td>
<td>Microtechnique</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>SC 203</td>
<td>Biological Instrumentation</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>AG 220</td>
<td>Laboratory Animal Pathology</td>
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<td>3</td>
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<tr>
<td>SC 228</td>
<td>Care &amp; Management of Lab. Animals I</td>
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<td>3</td>
</tr>
<tr>
<td>SO</td>
<td>Social Science</td>
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**Total Credits Required:** 69 or 70
**Fourth Semester**

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<tr>
<th>Course Code</th>
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<th>Laboratory</th>
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<td>SC 229</td>
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* Laboratory clinics are held at Nassau Medical Center with their cooperation.

**Course Descriptions**

*Numbers in parentheses indicate lecture and laboratory hours per week respectively.*

**Biological Sciences**

**SC100 APPLIED ENTOMOLOGY (3,0) 3 Cr.**

This course is intended for people interested in custom spray work and arboriculture. The nature of an insect, how it functions and how it is injurious to plants is presented. Pesticides, and application equipment are considered. Laws and safety regulations will be discussed. This course should aid materially in the qualification of people as licensed spray men.

**SC101 PLANT SCIENCE (1,3) 2 Cr.**

Plant structure, physiology and reproduction. The basic principles that govern plant growth and propagation.

**SC102 BOTANY (2,2) 3 Cr.**

Fundamentals of plant science with particular reference to seed plants; morphology, anatomy, physiology, reproduction and genetics of plants.

**SC103 PLANT PESTS (INSECTS & DISEASES) (2,3) 3 Cr.**

The nature of insects and plant disease organisms—their structure, growth, reproduction, recognition and control.

**SC104 GENERAL MICROBIOLOGY (2,2) 3 Cr.**


Prerequisites: 1 sem. College Chemistry, 1 sem. College Biology

**SC105 ANATOMY AND PHYSIOLOGY (3,2) 4 Cr.**

The structural and functional relationships of the human body systems. Concepts of the regulatory processes that integrate body cells, tissues, and organs. Individual study with physiological equipment, preserved and fresh materials, and models of biological structures.

Prerequisite: SC194, SC197 or permission

**SC107 BIOLOGY (3,0) 3 Cr.**

Selected topics relevant to our society today which involve an understanding of Biological principles. This includes pollution, population, drug abuse, transplants, energy transfers and other pertinent materials.

**SC108 ENTOMOLOGY (2,2) 3 Cr.**

The nature, structure, growth, habits, and injurious effects of insects and related forms. The identification of common plant pests, diseases, and their injuries, in the field. Control measures and application equipment. A collection of insects, plant diseases, and injuries is required.
SC109 DENTAL HISTOLOGY AND EMBRYOLOGY (2,2) 3 Cr.
Designed primarily for students majoring in dental hygiene, this course includes a study of general histology and an understanding of the development of the face and oral cavity and the basic structure of the oral tissues. The study is made from previously prepared slides.
Prerequisite: SC105.

SC110 MEDICAL MICROBIOLOGY (2,2) 3 Cr.
The role of microorganisms in the diseases of man and animals; the characterization of pathogenic bacterial species. Classification of communicable diseases and epidemiological aspects. Infection, immunity and host-resistance mechanisms; sero-diagnostic procedures in medical practice chemotherapy and mode of action of antibiotics.
Prerequisites: 1 sera. College Chemistry, 1 sem. College Biology

SC111 MICROBIOLOGY OF FOODS (2,3) 3 Cr.
The relationship of microbes to food spoilage. Quantitative microbiological analysis of food and dairy products for determination of sanitary quality. Transmission and control methods for food and water-borne diseases; sources of microbiological contamination in the food processing plant and means of control.
Prerequisites: SC104 and 2 semesters of College Chemistry.

SC114 ZOOLOGY (2,2) 3 Cr.
The world of animal life and the processes which activate and govern it, morphology, anatomy, physiology, reproduction and genetics.

SC115 PLANT PHYSIOLOGY (2,2) 3 Cr.
The functions of plant growth and maintenance in the seeding, vegetative, and reproductive stages of development. The physical and chemical factors involved in nutrition and growth are studied in the laboratory. Quantitative data are sought in all investigations followed by formal reporting and discussion of the work.
Prerequisite: 1 sem. of College Botany

SC119 GENERAL BIOLOGY (2,2) 3 Cr.
A survey of life from the standpoint of man, his structural and behavioral evolution, his functional characteristics, and his relationship to the natural world. The laboratory exercises involve simple investigations of the life processes by utilizing basic research tools. Here too, animal forms are emphasized.

SC133 BIOLOGY I (Botany) (3,3) 4 Cr.
The fundamentals of plant science including the processes which activate and govern plant life; anatomy, morphology, physiology, reproduction, genetics and pathology.

SC134 BIOLOGY II (Zoology) (3,3) 4 Cr.
The world of animal life and the processes which activate and govern it; morphology, anatomy, physiology, reproduction and genetics.

SC136 BOTANY (2,2) 4 Cr.
The same as SC133 with 1 hour less laboratory time.

SC137 ZOOLOGY (3,2) 4 Cr.
The same as SC134 with 1 hour less laboratory time.

SC201 MEDICAL ENTOMOLOGY (2,2) 3 Cr.
The study of insects and other arthropods that annoy man and animals, transmit diseases, and contaminate stored products; their identification, life histories, mode of disease transmission, and control.
Prerequisite: SC108

SC202 MICROTECHNIQUE (1,4) 3 Cr.
The preparation of plant and animal tissue for microscopic examination, including the embedding, sectioning, and staining of organs and tissues. The identification of cells and tissues is included.
Prerequisite: 136 and 137

SC203 BIOLOGICAL INSTRUMENTATION (1,3) 2 Cr.
Some of the basic tools of biological research are explored in relationship to the contemporary laboratory. Operational aspects of instruments used in biological assays are presented. Techniques of chromatography, electrophoresis, and centrifugation are investigated. Each instrument is considered within the framework of a simple laboratory exercise.
Prerequisites: 1 year of College Biology and 1 year of College Chemistry
SC204 ENTOMOLOGY (2,2) 3 Cr.
(2,3) 3 Cr.
The identification and control of pests and diseases of plants grown under glass, using latest chemical materials and control equipment.
Prerequisite SC108.

SC205 MYCOLOGY AND PLANT PATHOLOGY (2,3) 3 Cr.
The study of fungi and nematodes; their culture, isolation, identification, life cycles, injuries, and control.
Prerequisite: SC136

SC206 RESEARCH PROCEDURES (1,3) 2 Cr.
The application of previously learned techniques to research. Instructor directed group research problem run concurrently with student designed experiments. Routine responsibility in maintaining a research notebook, data taking, data handling techniques, analysis and reporting results. Techniques of information retrieval and library searching. The biotechnician as applicant and employee. Units on laboratory safety and basic slide rule operations are included.

SC207 ECONOMIC BOTANY (2,3) 3 Cr.
Plants used in commerce and industry, for medicines, pest control, spices, twine, and foods. Plant collecting and herbariums.
Prerequisite: SC156

SC208 FIELD RESEARCH PROCEDURE (1,6) 3 Cr.
Practice in the proper use of chemicals and application equipment in insect, plant disease, and weed control in the field. Planning, conducting, and recording control projects. Field trips to various commercial enterprises.
Prerequisite: SC237

SC209 MEDICAL ROUTINES (2,3) 3 Cr.
Basic medical office procedures and skills are learned. These include assistance in the treatment rooms, sterilization processes, blood counts, urinalysis, blood pressure and temperature determination, pulse and respiration rates, First Aid Principles and other related activities. Emphasis is placed on understanding the rationale and scientific background to each procedure.

SC212 WEEDS AND THEIR CONTROL (2,2) 3 Cr.
The classification and identification of weeds harmful to crop culture. Methods of controlling weeds and the herbicides used. Field study is stressed.
Prerequisites: SC102 or SC136

SC217 BIOLOGY SEMINAR (0,2) 1 Cr.
Presentations by the biology faculty and guest lecturers on the latest developments and research progress in the various fields of biology followed by questions and discussions.

SC221 INTRODUCTION TO OCEANOGRAPHY (2,2)
The chemical, physical, topographical and geologic aspects of the sea. The importance of the sea. Field study is included.
Prerequisites: CH107 or permission

SC223 PRINCIPLES OF ECOLOGY (2,3) 3 Cr.
This course introduces the student to the nature of eco systems, the organization and dynamics of ecological communities and populations.
Prerequisites: 1 year College Biology or permission

SC225 PARASITOLOGY (2,2) 3 Cr.
An introduction to parasites of man and domestic animals with an emphasis on identification, morphology, classification, etiology, life histories and the principles of parasitism.
Prerequisites: Zoology or College Biology

SC228 and SC229 CARE AND MANAGEMENT OF LABORATORY ANIMALS (2,4) 3 Cr.
This 2 course sequence provides the students with the essential information required to properly manage and care for laboratory animals. Emphasis is placed on record keeping, sanitation, quarters, breeding, nutrition and handling of the mouse, rat, guinea pig, rabbit and hamster. Laboratory clinics are held at a local hospital utilizing their research animal facilities.
SC234 MARINE BOTANY (2,2) 3 Cr.
The biology of plants in the sea their life histories, distribution, classification, structure and economic importance. Emphasis on the flora of the Long Island littoral. Field collection and study is included.
Prerequisite: SC136

SC236 MARINE ZOOLOGY (2,2) 3 Cr.
The classification, identification, life histories and ecology of the marine invertebrates and vertebrates from the protozoa through the chordates. Field collection study is included.
Prerequisite: SC237

SC237 PESTICIDES (3,0) 3 Cr.
The principles of formulating insecticides, herbicides, fungicides, rodenticides, nematicides and avicides. Safety, mathematical computations involved with formulations and uses of pesticides will be covered.
Prerequisite: 1 year of College Chemistry

SC238 INDUSTRIAL AND HOUSEHOLD PESTS (2,3) 3 Cr.
Biology and control of fabric, wood and stored grain pests will be stressed. The use of field trips, guest lecturers, movies and live materials will be incorporated into the course. Fundamentals of the pest control business and the responsibility to the public will be covered.
Prerequisite: SC108

SC241 ENVIRONMENTAL PROTECTION I (3,0) 3 Cr.
Survey and analysis of pollutants in the water environment including: sources, identification, affects, fate, persistence, treatment, control, and ultimate disposal. Survey and analysis of pesticides in the environment including: residues in soil, by crops, in water, and in air; minimizing contamination; and affects on wildlife and human health.
Prerequisites: 1 year College Biology and 1 year College Chemistry or permission

SC242 ENVIRONMENTAL PROTECTION II (3,0) 3 Cr.
Survey and analysis of pollutants in the air environment including: sources, identification, affects, fate, persistence, treatment, control and ultimate disposal. Study of solid waste problems including: municipal refuse, junked cars, industrial and solid wastes, mining and processing wastes and affects on environment.
Prerequisite: SC241 or permission

SC245 PRINCIPLES OF GENETICS (2,3) 3 Cr.
The mechanisms of heredity in plants and animals including man with emphasis on Mendelian principles, nature and structure of the gene, transmission and action of genes and population genetics. Laboratory studies cover the basic organisms and techniques used in genetic research.
Prerequisites: 1 sem. of College Zoology and 1 sem. of College Botany
This program is designed to prepare men and women for positions of responsibility in industry and business. The first-year core curriculum provides the student with a basic background which is essential to the development of the second-year concentration in one of three options—Accounting, Management, or Marketing.

In addition to the business courses of instruction, the students' collegiate program is broadened through a required sequence of study in English, mathematics or science, and the social sciences.

Graduates find that the broad background of this curriculum provides excellent preparation for the small business enterprise. Graduates entering large corporations secure initial employment in such areas as production, personnel, auditing accounting, selling, purchasing, and advertising. Many of our graduates have taken the opportunity of transferring to four-year colleges to complete the baccalaureate degree in business administration.

### Typical Employment Opportunities

- Salesman
- Expediter
- Merchandising
- Cost Accounting
- Personnel Assistant
- Claims Approver
- Inventory Control
- Quality Analyst

- Junior Accountant
- Purchasing
- Administrative Assistant
- Management Trainee
- Insurance
- Tax Auditor
- Business Office Representative
- Tax Examiner

### BUSINESS ADMINISTRATION

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<tr>
<td>BA 101 Accounting I</td>
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<td>SO 206 Economics</td>
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<td><strong>Second Semester</strong></td>
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<td>EN 101 Introduction to Literature**</td>
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<td>PE — Physical Education</td>
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<tr>
<td>MA 105 College Algebra or MA 100 Mathematics</td>
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<td>BA 102 Accounting II</td>
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<td>BA 162 Business Communications</td>
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**Notes:**
- **BA 101** Accounting I
- **BA 111** Business Organization & Management
- **EN 100** English Composition
- **PE** Physical Education
- **SO 219** General Psychology
- **SO 206** Economics
- **EN 101** Introduction to Literature**
- **BA 102** Accounting II
- **BA 131** Marketing I
- **BA 162** Business Communications
### Third Semester

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<td>BA 211 Principles of Management</td>
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<td>DP 202 Elements of Digital Computer Programming</td>
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<td>BA — Business Elective (select 2)</td>
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<td>SO — Social Science</td>
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**Total Credits Required: 65**

* Students will elect courses each semester from the suggested business elective list, in consultation with the Department Chairman or faculty advisor.

** Effective Fall 1971, EN 114 Speech will be required.

### Suggested Electives for Business Administration

(Select Four Courses)

**ACCOUNTING OPTION***

The accounting option features studies in cost accounting, taxes, office management, and business problems of the accounting profession.

- BA 161 Business Law I
- BA 201 Intermediate Accounting I
- BA 202 Intermediate Accounting II
- BA 203 Cost Accounting
- BA 206 Principles of Taxes
- BA 212 Production Management
- BA 215 Office Management
- BA 251 Investments
- BA 261 Business Law II

**MANAGEMENT OPTION***

Managerial aspects of business and industry are covered in courses including production management, personnel management, and problems in management.

- BA 133 Traffic Management I
- BA 150 Principles of Insurance
- BA 161 Business Law I
- BA 206 Principles of Taxes
- BA 212 Production Management
- BA 215 Office Management
- BA 216 Personnel Management
- BA 238 Industrial Purchasing
- BA 251 Investments
- BA 261 Business Law II
MARKETING OPTION*

The marketing functions of industry pertaining to purchasing, selling, advertising, merchandising and sales promotion are studied.

BA 133 Traffic Management I  BA 231 Marketing II
BA 135 Salesmanship  BA 234 Advertising Principles
BA 150 Principles of Insurance  BA 238 Industrial Purchasing
BA 161 Business Law I  BA 240 Consumer Behavior
BA 216 Personnel Management  BA 261 Business Law II

* Courses in Data Processing curriculum are also available for electives.

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Business-Administration

BA101 ACCOUNTING I (2,2) 3 Cr.
The principles of accounting are covered through a discussion of the accounting cycle of trading and non-trading businesses. The theory of debits and credits, the recording process, financial statements, depreciation and accruals.

BA102 ACCOUNTING II (2,2) 3 Cr.
A continuation of BA101 Accounting: the basic problems of partnerships the principles of corporation accounting, and departmental and branch accounting. The course also covers manufacturing and process costs, fund statements, consolidated statements, and other financial statements.
Prerequisite: BA101

BA111 BUSINESS ORGANIZATION AND MANAGEMENT (3,0) 3 Cr.
A concise picture of the business universe. Topics are: ownership, risk and risk-bearing production, finance and the financial system, marketing and transportation, and the effect of government on business.

BA131 MARKETING I (3,0) 3 Cr.
A study of those business activities which are necessary to effect transfers in the ownership and physical distribution of goods and services with reference especially to consumer goods. The importance of the marketing task, place of the consumer in our economic system, and the functions of retailing and wholesaling.

BA133 TRAFFIC MANAGEMENT I (3,0) 3 Cr.
The problems encountered in transporting goods from the end of the production line to the home of the ultimate consumer, by means of air, highway, rail, waterways and pipelines. Attention is given to the creation of a total product distribution system. Effective relationships are discussed between various types of carriage.

BA135 SALESMANSHIP (3,0) 3 Cr.
Creative selling and the development of the sales personality. Classification and use of buying motives, analysis of customer types, complete product knowledge, and organization of the sales effort. Individual sales presentations are required.

BA150 PRINCIPLES OF INSURANCE (3,0) 3 Cr.
General principles, specific legal doctrines and common policy provisions relating to life, property, and casualty insurance; analysis of types of coverage available for the protection of individuals and business.

BA151 BUSINESS MATHEMATICS (3,0) 3 Cr.
The fundamentals of applied mathematics in the field of accounting, finance, marketing and selling. Topics include interest, bank discount, insurance, and annuities. The use of arithmetic as a managerial tool is stressed.
BA152 FINANCE (3,0) 3 Cr.
An introductory course covering the whole field of finance, both public and private. Topics include the monetary and credit system of the United States, the demand for funds, and monetary policies and credit policies. Emphasis is also placed on current problems in the field of finance.

BA161 BUSINESS LAW I (3,0) 3 Cr.
An introduction to legal concepts of law and society, the law of contracts, agency, employment, commercial paper, and sales.

BA162 BUSINESS COMMUNICATIONS (3,0) 3 Cr.
A study of the role of both oral and written communications in modern business. Emphasis is placed on the preparation of business reports, credit, order, sales claim, collection, adjustment, and routine business letters. Review is provided in the fundamental skills of effective writing.

BA201 INTERMEDIATE ACCOUNTING I (2,2) 3 Cr.
A review of the fundamental processes of accounting; an analysis of working capital items and valuations; and an understanding of noncurrent items including investments, plant, and equipment, intangibles, and long-term debt; and an analysis of financial statements. Prerequisite: BA102

BA202 INTERMEDIATE ACCOUNTING II (2,2) 3 Cr.
A continuation of BA201. Emphasis in this course will be on the stockholders' equity-paid-in capital and retained earnings; and an analysis of financial statements and funds-flow. Prerequisite: BA201

BA203 COST ACCOUNTING (2,2) 3 Cr.
Principles of cost accounting applied to manufacturing industries. The use of cost data and procedures under job order, process cost, and standard cost accounting systems as a tool of management. Prerequisite: BA102

BA206 PRINCIPLES OF TAXES (3,0) 3 Cr.
Fundamental principles of accounting procedures, laws and regulations involved in recording taxes, payroll deductions, employment records, and tax reports. The preparation of income tax returns for the individual proprietorship and the partnership type of organization. Prerequisite: BA101

BA211 PRINCIPLES OF MANAGEMENT (3,0) 3 Cr.
A basic course that recognizes the importance of management as a distinct function and the university of management principles in the administration of any type of enterprise. The managerial functions of planning, organizing, and controlling are presented as a basis for subsequent courses that emphasize their application in specific areas.

BA212 PRODUCTION MANAGEMENT (3,0) 3 Cr.
Selected production problems are considered in such areas as analytical methods in production management, design of production systems, operation and control of production systems.

BA215 OFFICE MANAGEMENT (3,0) 3 Cr.
A study of the perspectives of office management; general considerations of data processing; computing and duplication processes; communications, filing processes; retention processes and records management; the nature, organization, tools of system analysis; managerial functions; employee selection, development, motivation, and supervision. Theoretical problems in office management.

BA216 PERSONNEL MANAGEMENT (3,0) 3 Cr.
Major personnel functions in business and industry; policies, practices, and operating procedures in employment, training, safety and medical, staffing, and employee benefits.

BA231 MARKETING II (3,0) 3 Cr.
Marketing, planning, research, channels of distribution, management of pricing, management of selling, and management of customer service. Emphasis is placed on industrial goods. Prerequisite: BA191
BA234 ADVERTISING PRINCIPLES (3,0) 3 Cr.
The fundamental principles, techniques, and procedures used in modern advertising. Copywriting, selection of media, layout, the role of the advertising agency, and the planning of an advertising campaign.

BA238 INDUSTRIAL PURCHASING (3,0) 3 Cr.
The principles and techniques of purchasing as they apply in actual practice today. The purchasing area will be treated as a specialized function in the business organization. Constructive aspects of purchasing with emphasis on long-term policies and profit-making opportunities.

BA240 CONSUMER BEHAVIOR (3,0) 3 Cr.
A study of psychological principles, methods and appeals developed in advertising. Emphasis is placed on the development of a psychological point of view toward advertising.
Prerequisite: BA234

BA251 INVESTMENTS (3,0) 3 Cr.
Examination of financial literature and facilities available as guides to the proper selection of securities. The approach is from the viewpoint of the individual, including a logical portfolio commensurate with the financial resources of the individual.

BA260 STATISTICS (3,0) 3 Cr.
Formulation of decision problems and the use of data which serve as a basis for deciding upon a rational course of action. Statistical populations, decision-parameters, sample selection, probability theory, sampling distribution, risk, error, bias, and control charts.

BA261 BUSINESS LAW II (3,0) 3 Cr.
A continuation of BA161 Business Law I with application of legal principles to personal property, bailments, security devices, partnerships, corporations, real property, estates, bankruptcy, governments and business.
CIVIL TECHNOLOGY—HIGHWAY
(An ECPD approved Engineering Technology Curriculum)

PROFESSOR NICHOLAS ROMANELI, Chairman

The construction industry is the largest single industry in America today. The growth of our country is dependent upon the construction of roads and bridges, industrial plants, water systems, homes of our people, and all other structures which house the activities of our civilization. An army of engineers, architects, engineering technicians, and skilled mechanics is busy changing our cities, highways, and bridges. It is moving mountains, creating lakes, and bridging wide stretches of water. The courses in the Civil Technology curriculum are arranged to give a basic education in the fundamentals of soils and foundations, concrete and steel construction, structural design, surveying, mapping, and highway engineering. Graduates are engineering technicians prepared to assist Civil Engineers either in field or office work. State, county, and municipal departments of public works, as well as private engineers and contractors, offer employment to our graduates.

Typical Employment Opportunities

- Structural Design Assistant
- Contractor
- Construction Superintendent
- Surveyor
- Engineering Aide
- Structural Draftsman
- Highway Draftsman
- Topographer
- Estimator
- Materials Tester
- Inspector
- Field Clerk

CIVIL TECHNOLOGY—HIGHWAY

First Semester

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<td>CT 112</td>
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Second Semester

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<tr>
<td>SO —</td>
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<tr>
<td>EN 101</td>
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<td>PE —</td>
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<td></td>
<td></td>
<td>16</td>
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<td>19</td>
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CONSTRUCTION TECHNOLOGY—BUILDING
(An ECPD approved Engineering Technology Curriculum)

Professor Nicholas Romanelli, Chairman

Civilization leaves its mark of progress in the architecture of its buildings. Our modern civilization is so vast and is changing so rapidly that construction is one of the great accomplishments of our times. The imagination of the architect working with the ever increasing structural knowledge and ingenuity of the engineer has produced a multitude of the world's most unique buildings. The vast industry of building materials supplies the designer with a nearly unlimited variety of materials and structural assemblies.

The courses in the building construction curriculum are designed to give a basic understanding of building technology. A solid foundation in mathematics, together with knowledge of materials and methods of construction, are correlated with technical studies in planning, designing, surveying, drafting, estimating, inspecting.

Graduates are engineering technicians prepared for many types of supervisory and technical employment in the building industry. The variety of employment opportunities enables our graduates to select positions that favor individual interest and ability.

Typical Employment Opportunities

Architectural Designer
Architectural Draftsman
Structural Detailer
Construction Superintendent
Contractor
Building Inspector

Assistant Surveyor
Engineering Aide
Estimator
Expeditor
Materials Salesman
Materials Tester
## CONSTRUCTION TECHNOLOGY—BUILDING

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT 103</td>
<td>Surveying I</td>
<td>2 Class, 3 Lab.</td>
</tr>
<tr>
<td>CT 111</td>
<td>Graphics</td>
<td>1 Class, 2 Lab.</td>
</tr>
<tr>
<td>CT 112</td>
<td>Construction Materials</td>
<td>1 Class, 2 Lab.</td>
</tr>
<tr>
<td>EN 100</td>
<td>English Composition</td>
<td>3 Class, 0 Lab.</td>
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<tr>
<td>PE</td>
<td>Physical Education</td>
<td>0 Class, 2 Lab.</td>
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<tr>
<td>MA 124</td>
<td>Mathematics</td>
<td>3 Class, 0 Lab.</td>
</tr>
<tr>
<td>PH 131</td>
<td>Physics</td>
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### Second Semester

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<tbody>
<tr>
<td>CT 104</td>
<td>Structural Drafting</td>
<td>2 Class, 3 Lab.</td>
</tr>
<tr>
<td>CT 106</td>
<td>Statics</td>
<td>3 Class, 0 Lab.</td>
</tr>
<tr>
<td>CT 107</td>
<td>Surveying II</td>
<td>2 Class, 3 Lab.</td>
</tr>
<tr>
<td>EN 101</td>
<td>Introduction to Literature</td>
<td>3 Class, 0 Lab.</td>
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<tr>
<td>PE</td>
<td>Physical Education</td>
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</tr>
<tr>
<td>MA 125</td>
<td>Mathematics</td>
<td>3 Class, 0 Lab.</td>
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<td>SO</td>
<td>Social Science</td>
<td>3 Class, 0 Lab.</td>
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<td><strong>Total</strong></td>
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### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>CT 201</td>
<td>Architectural Design I</td>
<td>2 Class, 3 Lab.</td>
</tr>
<tr>
<td>CT 208</td>
<td>Construction Management and Superintendence</td>
<td>2 Class, 2 Lab.</td>
</tr>
<tr>
<td>CT 206</td>
<td>Strength of Materials</td>
<td>3 Class, 0 Lab.</td>
</tr>
<tr>
<td>CT 218</td>
<td>Construction Methods (Architectural)</td>
<td>1 Class, 2 Lab.</td>
</tr>
<tr>
<td>MA 126</td>
<td>Mathematics</td>
<td>3 Class, 0 Lab.</td>
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<tr>
<td>SO</td>
<td>Social Science</td>
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<td><strong>Total</strong></td>
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<td>13 Class, 7 Lab.</td>
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### Fourth Semester

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CT 207</td>
<td>Architectural Design II</td>
<td>2 Class, 3 Lab.</td>
</tr>
<tr>
<td>CT 202</td>
<td>Construction Estimating</td>
<td>1 Class, 2 Lab.</td>
</tr>
<tr>
<td>CT 223</td>
<td>Development of Architectural Design</td>
<td>2 Class, 0 Lab.</td>
</tr>
<tr>
<td>CT 222</td>
<td>Elements of Structures (Architectural)</td>
<td>3 Class, 2 Lab.</td>
</tr>
<tr>
<td>PH 132</td>
<td>Physics 4</td>
<td>3 Class, 2 Lab.</td>
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<tr>
<td>SO</td>
<td>Social Science</td>
<td>3 Class, 0 Lab.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>14 Class, 9 Lab.</td>
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</table>

Total Credits Required: 72
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Civil Technology and Construction Technology

CT103 SURVEYING I (2,3) 3 Cr.
Linear measurements with tape with temperature and sag corrections; differential profile and reciprocal leveling; open and closed traverses by bearing azimuth, and deflection methods; error of closure and distribution of error; computations of volumes of cuts and fills by the "average end-area" and prismoid formulae. Field work involves linear measurements, use of level for all types of leveling, and use of transit for running traverses.

CT104 STRUCTURAL DRAFTING (2,3) 3 Cr.
Introduction to architectural and structural working drawings. From given design data, representative engineering working drawings and shop detail drawings for a steel building are developed. The latter part of the semester is devoted to familiarization and reinforced concrete working drawings and the development of typical placing drawings and details. AISC and ACI detailing standards are followed for steel and concrete.

CT106 STATICS (3,0) 3 Cr.
Prerequisite: PH131

CT107 SURVEYING II (2,3) 3 Cr.
A continuation of Surveying I. State coordinate systems; mapping by photogrammetric methods and by conventional field methods; determination of areas and volumes; construction layout; instrument adjustment; selected field projects.
Prerequisite: CT103

CT111 GRAPHICS (1,2) 2 Cr.
Drafting techniques, use of instruments, lettering, freehand sketching, and perspective are covered in conjunction with the elements of descriptive geometry. Orthographic projection, true lengths, true size and shape, auxiliary views and rotation are included. Methods of reproduction of drawings.

CT112 CONSTRUCTION MATERIALS (1,2) 2 Cr.
An introduction to the basic properties and uses of materials employed in Civil and Architectural construction. Timber, ferrous and non-ferrous metals, concrete, clay products, plastics, and soils are covered. A system of guest lecturers, student research and reports, films and regularly scheduled lectures are used, as well as laboratory demonstration. Design mixes in asphalt and concrete are included.

CT201 ARCHITECTURAL DESIGN I (2,3) 3 Cr.
Drafting standards, techniques and creative design principles related to the field of architecture. Freehand drawing. A design problem in residential architecture with the development of research notes, preliminary studies and architectural presentation drawings.

CT202 CONSTRUCTION ESTIMATING (1,2) 2 Cr.
Development of a systematic procedure to take off quantities from working drawings for a typical project. Current wage rates and material costs, percentages, proportions and square foot methods of estimating from the point of view of the general contractor. Trades are covered in relation to coordination and workmanship. Cost of the project is summarized by applying overhead, expenses and profit to the sum of labor and material costs.
Prerequisite: CT218

CT203 HIGHWAY DESIGN I (2,3) 3 Cr.
The principles of geometric highway design and traffic. Highway systems, highway planning, origin and destination studies, traffic counts, gravity model. Study of highway related traffic accidents. Planning for improving existing highways and future needs. Driver, Vehicle, and Road Characteristics. Highway capacity, sight distance, superelevation, design speed criteria.
Prerequisite: CT107
CT205 ROUTE SURVEYING (1,3) 2 Cr.

The principles and procedures for route surveying related to highway design and construction. Circular curves, vertical curves, compound and spiral curves cross sections, earthwork, determination of meridian by astronomical observations. Computer programming. These are applied to practical problems in field projects.
Prerequisite: CT107

CT206 STRENGTH OF MATERIALS (3,0) 3 Cr.

Simple stresses; elasticity; temperature stresses; torsional stresses; combined stresses; shear and moment diagrams for beams; moments of inertia of unsymmetrical sections; flexural and shearing stresses in beams; deflections in beams. Use of AISC manual.
Prerequisite: CT106

CT207 ARCHITECTURAL DESIGN II (2,3) 3 Cr.

Development of working drawings and model of previously designed residence. A creative design problem of a commercial, industrial, or public building. Development and presentation of research, preliminary studies, architectural renderings, and a model of this project.
Prerequisite: CT201

CT208 CONSTRUCTION MANAGEMENT AND SUPERINTENDENCE (2,2) 3 Cr.

An analysis of a contractor's operation from the initial purchase of land to the completion of a project. A study of the contractor's relationship to architect, engineer, and client, including land purchase, development, code, and zoning requirements. Trades are considered with respect to coordination, progress charts, equipment, sub-contracts, and architectural specifications. Field trips to construction projects.

CT209 HIGHWAY DESIGN II (2,3) 3 Cr.

A continuation of Highway Design I. Students prepare a set of design computations, quantity and cost estimates, and design drawing for a highway project, including a grade separation for highways are studied.
Prerequisite: CT203

CT214 CONSTRUCTION METHODS (Civil) (1,3) 2 Cr.

Continuing study of soils as a construction material involving both theory and laboratory. Asphalt and Portland cement as materials applied in Highway Construction. Construction methods site preparation; subgrade construction; flexible and rigid pavement types and drainage installation. Use of Benkleman Beam and other quality control instruments.
Prerequisite: CT112

CT218 CONSTRUCTION METHODS (Architectural) (1,2) 2 Cr.

A drafting course where the methods of assembling and detailing construction materials are studied. Bearing walls of frame, masonry and concrete are included as are curtain walls of various contemporary materials. Foundation details and roof framing systems, various flashing methods, and opening treatments in several materials are presented.
Prerequisite: CT112

CT219 HYDRAULICS OF DRAINAGE (2,0) 2 Cr.

Introduction to basic theory of hydraulics of flow in pipes and open channels including the hydrology of drainage areas and storm water runoff. Design of drainage systems including the determination of pipe sizes and drainage structure will be emphasized.
Prerequisite: CT106

CT220 ELEMENTS OF STRUCTURES (Civil) (3,2) 4 Cr.

Application of strength of materials to elementary structural design in steel and concrete. Elastic theory in steel and concrete is emphasized, with an introduction to plastic design and ultimate strength. Loadings and structural elements commonly encountered in highway and bridge work are used for analysis and design.
Prerequisite: CT206
CT221 PAVEMENT DESIGN (3,0) 3 Cr.
Discussion of theoretical and empirical pavement design methods for flexible pavements. Methods covered include CBR, California Stabilometer, Triaxial methods. N. Dakota Cone Bearing, Group Indes, Asphalt Institute, WASHO and AASHO road tests are studied. Design procedure utilizing coefficients of relative performance from AASHO is developed. Design of Asphalt overlays utilizing the "Benekelman Beam". Rigid pavement methods are discussed including thickness, steel reinforcing and joint design.

CT222 ELEMENTS OF STRUCTURE
(Architectural) (3,2) 4 Cr.
This course is similar to CT220 except that loadings and structural elements commonly encountered in buildings are used for analysis and design.
Prerequisite: CT206.

CT223 DEVELOPMENT OF ARCHITECTURAL DESIGN (2,0) 2 Cr.
A study of the development of building design from prehistoric times through the major historical periods to the present. Emphasis is on the evolution of the forms derived from indigenous technologies of the periods surveyed.

CT224 ELEMENTARY PHOTOGRAMMETRY (1,3) 2 Cr.
Prerequisite: CT107
COMMUNITY SERVICE ASSISTANT

Professor Bernard Schwartzberg, Chairman

Designed to provide the fundamental knowledge and skills essential for understanding human behavior, human problems, and human relationships, the Community Service Assistant curriculum prepares students for meaningful work with people in community, private, or public social welfare agencies.

The nature and needs of the individual are explored from various points of view of psychological forces and from those of the society in which he lives.

In their second year, students have the opportunity of gaining additional insights through field placement, which integrates academic understanding with agency experience.

For all field experiences, student dress must conform with field agency protocol.

Typical Employment Opportunities

Case Work Aide
Medical Social Work Assistant
Golden Age Club Administration Aide
Medicaid Assistant
Welfare Research Assistant

Community Service Assistant

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CS 101 Foundations of Social Work</td>
<td>3 0 3</td>
<td>3</td>
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<tr>
<td>EN 100 English Composition</td>
<td>3 0 3</td>
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<td>EN 114 Speech</td>
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<td>PE — Physical Education</td>
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<td>SO 219 Psychology</td>
<td>3 0 3</td>
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<td>SO 222 Sociology</td>
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<tr>
<th>Second Semester</th>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>CS 102 Community Service Agencies</td>
<td>1 3 2</td>
<td>2</td>
</tr>
<tr>
<td>CS 103 Intro. to Social Work Processes</td>
<td>3 0 3</td>
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<tr>
<td>EN 101 Intro. to Literature</td>
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<tr>
<td>MA 100 Mathematics or</td>
<td>3 0 3</td>
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<tr>
<td>MA 105 College Algebra (1)</td>
<td>3 0 3</td>
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<tr>
<td>SC 107 Biology or</td>
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<td>3</td>
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<tr>
<td>SC 119 Biology (1)</td>
<td>3 0 3</td>
<td>3</td>
</tr>
<tr>
<td>SS 101 Typewriting (3) or</td>
<td>1 3 2</td>
<td>2</td>
</tr>
<tr>
<td>Authorized Elective (4)</td>
<td>3 0 3</td>
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<tr>
<td>PE — Physical Education</td>
<td>0 2 1</td>
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<td>13-17</td>
<td>17 or 18</td>
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**Third Semester**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 101</td>
<td>Field Experience (5)</td>
<td>1 6 4</td>
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<tr>
<td>CS 203</td>
<td>Organization of Community Welfare Services</td>
<td>3 0 3</td>
</tr>
<tr>
<td>SO 220</td>
<td>Psychology</td>
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<tr>
<td>SO 223</td>
<td>Sociology</td>
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<td></td>
<td>Authorized Elective (4)</td>
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**Fourth Semester**

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<tr>
<td>CS 202</td>
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<tr>
<td>CS 204</td>
<td>Community Mental Health Programs or</td>
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</tr>
<tr>
<td>CS 206</td>
<td>Introduction to Community Organization (6)</td>
<td>3 0 3</td>
</tr>
<tr>
<td>CS 208</td>
<td>Research and Recording in Social Work</td>
<td>3 0 3</td>
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<tr>
<td>SO 232</td>
<td>Developmental Psychology</td>
<td>3 0 3</td>
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<td>SO 243</td>
<td>Black History</td>
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Total Credits Required: 65 or 66

**Explanatory Notes for Community Service Assistant Program**

1. Must meet requirements of department offering course, namely, Science—2 high school units, Biology required, Chemistry recommended, Math—2¼ units, including intermediate Algebra.

2. CS 102 may be waived for those students with considerable paid employment in the field, or now working in paid positions in related agencies. If so, authorized elective may be chosen (See No. 4).

3. SS 101 is required unless student has passed courses in typewriting in high school, or satisfactorily completed equivalent course. If so, authorized elective may be chosen (See No. 4).

4. Electives with three hours of class and no lab hours for 3 credits per semester may be selected as alternate with prior permission of chairman of department from among additional courses in the Community Service Assistant or Social Science Department, or from selected courses in Pre-Health and Social Sciences Division, Liberal Arts, Spanish or Nursery Education.

5. Students with considerable paid employment in the field or now working in paid positions in related agencies may be permitted to elect CS 201 and CS 202 for 1 hour class and 3 hours field or lab experience for 2 credits and substitute authorized elective course, with prior permission of chairman of department (See No. 4).

6. CS 204 is required for students interested in or working in community mental health agencies. CS 206 is alternate for all other students. Both may be selected as authorized electives for students where not required.

7. All students will be required to provide their own transportation to and from field agency visits and field experience placements. Students are required to meet the dress requirements of the agencies.
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Community Service Assistant

CS101 FOUNDATIONS OF SOCIAL WORK (3,0) 3 Cr.
The concepts involved in the various aspects of social work are examined, social case-work, where the importance of the approach to the individual is stressed; social group-work, where the role of the professional in helping others, using the group process, is discussed; community organization, where the principles of this aspect of social work are evaluated; and in social planning, where community improvement planning methods are studied.

CS102 COMMUNITY SOCIAL SERVICE AGENCIES (3,0) 3 Cr.
This course presents a general overview of the community agencies, public and private, which provide social services for adults and children. The opportunity is provided for visiting and observing typical agencies such as the Nassau and Suffolk Departments of Social Service, the Family Service Association of Nassau County, Central Islip State Hospital and the Luther E. Woodward School for Emotionally Disturbed Children.

CS103 INTRODUCTION TO SKILLS AND TECHNIQUES IN SOCIAL WORK (3,0) 3 Cr.
This course presents an introduction to the various skills, techniques and methods in the field of social work. It includes consideration of interviewing methods, and an examination of budgeting and financial management techniques in case work. It also reviews the basic processes used in each of the areas of social work, individual counseling in case work, the group methods utilized in group work, and the techniques used in community organization.

CS201 FIELD EXPERIENCE (1,3) 2 Cr.
The field experience course provides the opportunity for the student to enlarge his scope through direct service in agencies providing help to clients, under professional supervision. The student will be enabled to integrate his educational understanding with the field experience, and learn how he relates to people. The field experience should be with one agency for the two semesters.

CS202 FIELD EXPERIENCE (1,3) 2 Cr.
Part two of a two-semester course. See description for CS201.

CS203 ORGANIZATION OF COMMUNITY WELFARE SERVICES (3,0) 3 Cr.
An understanding of the nature of community welfare services, both public and private, will be developed, through seeing social welfare as a social institution. Various areas of public welfare services will be studied, as well as related areas of private social welfare services. The course will review the relationship between governmental and private services.

CS204 COMMUNITY MENTAL HEALTH PROGRAMS AND PLANNING (3,0) 2 Cr.
The current programs and the future planning for those who have personal, emotional and mental problems are examined in this course. The concepts of community planning for those who have these problems, as well as for preventive mental health for all, are reviewed. The contributions of each of the members of the mental health team, social worker, psychologist and psychiatrist, are considered. The various types of treatment in the mental health field to which the community service assistant will be exposed are also discussed.

CS205 COMMUNITY PROGRAMS AND PLANNING FOR THE MENTALLY RETARDED (3,0) 3 Cr.
This course considers programs which have been established and those which are still needed for the mentally retarded child and adult. It reviews the special methods of education for the children who are intellectually handicapped, including the development of specific educational programs and techniques. It examines the utilization of mentally retarded adults in special workshop settings, as well as in regular employment. It also pays attention to the ways in which the community can be better organized to meet the special needs of the mentally deficient of all ages.
CS206 INTRODUCTION TO COMMUNITY ORGANIZATION PRACTICES (3.0) 3 Cr.

This course presents a survey of community organization practices, past and present. Emphasis in the course is placed on chest and council activities, and on the labor and civil rights movements for the historical background. The current focus will be on the newer methods of community organization which have emerged since the Economic Opportunity Act of 1964, particularly with the Black and other underprivileged communities. Guest lecturers will include professionals from the community organization field of social service, and lay social activists.

CS208 RESEARCH AND RECORDING IN SOCIAL WELFARE (3.0) 3 Cr.

This course presents an introduction to three basic methods of communication used in the field of social welfare, statistics, research and recording. It introduces concepts used in social welfare related to the collection, analysis, interpretation and utilization of statistical data. It examines the fundamentals of research in this field, including the concepts of sampling, analysis of data, and writing of findings. It deals with the recording of data in the field including case recording in case work, the group process in that area, and minutes and reports for community organization.
DATA PROCESSING

DR. HAROLD JOSEPH HIGHLAND, Chairman

High speed computers and ancillary data processing equipment are a necessary integral part of the business, scientific, industrial, educational and governmental facilities of the nation. Data processing is a growing professional field with rapidly expanding opportunities for employment.

This curriculum concentrates on the organization and interaction of the computer complex as an information processing system. The course is designed to provide the student with: an understanding of the principles and methods of data handling; competence in the application of computers and data processing equipment in different environments; experience in the use of both business and scientific programming languages, and an overview of business organization and management.

Work with a modern computer, auxiliary magnetic tape, disc and card processing equipment is included, as well as systems design, data processing techniques and programming languages.

Typical Employment Opportunities

Business Programming Trainee
Program Coder
Digital Computer Console Operator
Computer Librarian
Junior Documentation Writer

Junior Scientific Programmer
Systems Aide
Computer-Peripheral-Equipment Operator
Statistical and Tabulating Aide

DATA PROCESSING

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DP 101</strong> Basic Computer Concepts</td>
<td>3</td>
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<tr>
<td><strong>DP 104</strong> Algorithmic Processes I</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>EN 100</strong> English Composition</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>PE</strong> — Physical Education</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>SO</strong> — Social Science</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>MA</strong> — Mathematics*</td>
<td>3</td>
<td>0</td>
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<td><strong>Grand Total</strong></td>
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<tr>
<th>Second Semester</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td><strong>DP 115</strong> Machine and Assembly Language Programming</td>
<td>3</td>
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</tr>
<tr>
<td><strong>DP 106</strong> Algorithmic Processes II</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>EN 101</strong> Introduction to Literature</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>PE</strong> — Physical Education</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>SO 206</strong> Economics</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>MA</strong> — Mathematics*</td>
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<td>0</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>15</td>
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Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>DP 206</td>
<td>Control and Service Programming Systems</td>
<td>2 2 3</td>
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<tr>
<td>DP 240</td>
<td>Algebraic Language Programming &amp; Statistics</td>
<td>3 0 3</td>
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<td>SO</td>
<td>Social Science</td>
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<td>DP</td>
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<td>DP 220 or DP 226)</td>
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|        |                                                |         |
| 14-15  | 4 16-17                                        |         |

Fourth Semester

<table>
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<th>Course Code</th>
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<tr>
<td>DP 204</td>
<td>System Analysis and Design</td>
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<td>DP 230</td>
<td>System Simulation</td>
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<td>DP</td>
<td>Data Processing elective (Select 1 between</td>
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<td></td>
<td>DP 225 or DP 229)</td>
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|        |                                                |         |
| 14-15  | 4 16-17                                        |         |

Total Credits: 65-68

* Recognizing the varying mathematics background of the entering student, the following combinations are acceptable: MA 100 - MA 105, MA 105 - MA 106, MA 135 - MA 137.

** The student electing DP 220 must take DP 108. The student electing DP 226 must take PH 131 or MA 135.

*** The student electing DP 225 must take DP 109 and an elective from Business, Social Science, or Science. The student electing DP 229 may select one elective from Math or Science, and one from Social Science.

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Data Processing

DP101 BASIC COMPUTER CONCEPTS

(3,0) 3 Cr.

Fundamental concepts of basic computer organization; interrelationships and functions of the individual components in a computing system. Basic internal data structures—binary, hexadecimal, and extended binary coded decimal. Internal manipulation of data logics and techniques. Basic machine language concepts.

DP104 ALGORITHMIC PROCESSES I

(3,2) 4 Cr.

Introduction to analytical problem solving methods using a digital computer. The idea of an algorithm as a step-by-step, well defined procedure for solving a problem is developed. Flowcharting as a graphic description of an algorithm. Programming language as the method of describing the algorithm to a computer. Both iterative and recursive algorithms are developed.

DP106 ALGORITHMIC PROCESSES II

(3,2) 4 Cr.

Introduction to algorithms for numerical and non-numerical calculations, statistics, business data processing including disk and tape applications. Programming of simulated business and industrial problems. Prerequisite: DP101 and DP104

DP108 PRINCIPLES OF AUTOMATIC ACCOUNTING

(3,0) 3 Cr.

An examination of how the principles of accounting are being integrated with tabulating equipment and the computer. A problem approach will be followed integrating manual accounting flow, punched card systems and comprehensive computer operations.
DP109 COST ANALYSIS (1,2) 2 Cr.
Study of the techniques of differential cost and revenue analysis and alternative capital expenditure determination as well as other management decision-making problems. Use of data processing and computer applications will be stressed for determining financial data flow and costs.
Prerequisite: DP108

DP116 MACHINE AND ASSEMBLY LANGUAGE PROGRAMMING (3,0) 3 Cr.
Fundamentals of machine and assembly language programming including data representation and manipulation, storage addressing and allocation, base register and displacement concepts, arithmetic and logic operations and interaction control techniques. Introduction to IOCS and programming macros.
Prerequisite: DP101, DP104

DP200 DATA PROCESSING FOR THE BUSINESS STUDENT (3,0) 3 Cr.
This introductory course is designed to provide an overview of the sum total of devices and systems made by man for the use of man in business. Topics will be decision making, including optimization and modeling: computers including organization and programming concepts; and systems, including dynamics, feedback and stability.

DP202 ELEMENTS OF DIGITAL COMPUTER PROGRAMMING (3,0) 3 Cr.
Fundamentals of computer structure and use of the computer as a symbol manipulating device and the processing of information. Basic flowcharting and algorithm manipulation using FORTRAN. Practice in formulating data processing problems and statistical analysis of business problems.
Prerequisite: BA102

DP204 SYSTEM ANALYSIS AND DESIGN (2,2) 3 Cr.
Systems definition and determination; data capture and recording; file organization and processing; documentation and code design; system control and timing; implementation and measurement of performance and costs; study of batched job and real-time systems. Projects will be assigned and guided in laboratory.
Prerequisite: DP206

DP206 CONTROL AND SERVICE PROGRAMMING SYSTEMS (2,2) 3 Cr.
Study of control programs—including job control programs and supervisors, data management concepts including IOCS routines; study of service programs—including compilers, librarians, linkage editors, and utilities. Applications of these concepts by using DOS, including "hands-on" communication experience with supervisory program in laboratory.
Prerequisite: DP116, DP106

DP220 COBOL PROGRAMMING (3,2) 4 Cr.
Study of the COBOL language including file manipulation, sub-routines, table processing, disk and tape utilization.
Prerequisite: DP106

DP225 BUSINESS APPLICATION PROGRAMMING (3,2) 4 Cr.
Case study approach with programming assignments. Concentration will be on problem-solving with examples from accounting, inventory, and management. Students will be given beginning to end responsibility for a typical programming project. Laboratory experiences include "hands-on" experimenting and documenting the complete project.
Prerequisite: DP220

DP226 DATA STRUCTURES (3,2) 4 Cr.
Basic concepts of data. Linear lists, strings, arrays. Representation of trees and graphs. Storage systems and structures, and storage allocation and collection. Symbol tables and searching techniques. Formal specification of data structures, data structures in programming languages, Fortran IV language laboratory.
Prerequisite: DP116, DP106

DP229 NUMERICAL ANALYSIS (3,2) 4 Cr.
The solution of equations, interpolation, and approximations, numerical differentiation and integration. The solution of linear systems by direct and iterative methods, matrix inversion. Using FORTRAN IV and PL 1, laboratory experiments for the problem-solving and programming of selected problems.
Prerequisite: DP226
DP230 SYSTEM SIMULATION (3,0) 3 Cr.
Introduction to simulation and comparison with other techniques. Discrete simulation models, and introduction to queuing theory and stochastic processes. Simulation methodology including generation of random numbers, design and analysis of simulation experiments.

DP240 ALGEBRAIC LANGUAGE PROGRAMMING AND STATISTICS (3,0) 3 Cr.
Algebraic language programming using statistical problems. Fundamentals of statistical decision-making, including elements of descriptive statistics—central tendency and dispersion-, time-series analysis, correlation and regression methods. Approaches and differences between raw data and frequency array analysis by computer. Introduction to probability theory and sampling concepts. Prerequisite: DP206
DENTAL HYGIENE

Dr. Kendall P. Thomas, Chairman

The medical and dental professions have long appreciated the connection between oral hygiene and general health, and the general public is now beginning to recognize this relationship. This situation creates a need not only for more dentists but for a proportionately greater number of dental hygienists. A dental hygienist performs oral prophylaxis, including the taking and developing of dental roentgenograms, and instructs patients in the proper care of the mouth.

This curriculum is designed to provide education in theory and practice requisite for the licensed profession of dental hygiene. The first year’s work is concerned largely with general subjects and basic sciences. Students also work with dental materials and practice oral prophylaxis on manikins. The second year’s work is concerned with specialized subject matter and practical training. Students gain experience by assisting dentists, performing oral prophylaxis at the College and hospitals, as well as the taking and processing of dental x-rays.

Required courses prepare students for private practice under the supervision of a registered dentist. Positions may occur in private dental offices, in public clinics, or in schools or other institutions.

Graduates of the College with a major in Dental Hygiene are eligible for participation in the various State Board Examinations in Dental Hygiene as well as the national Board Examination in Dental Hygiene.

For all field experiences, student dress must conform with field agency protocol.

Typical Employment Opportunities

Private Dental Office
Public Health Clinic
Hospital
Industrial or Private Clinic

Clinic Supervisor
Research Assistant
Dental Assistant
Dental X-Ray Technician

<table>
<thead>
<tr>
<th>DENTAL HYGIENE</th>
<th>Hours per Class</th>
<th>Week Lab.</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>DH 101 Dental Anatomy</td>
<td>3</td>
<td>2</td>
<td>4</td>
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<tr>
<td>CH 106 Introduction to Biochemistry</td>
<td>3</td>
<td>2</td>
<td>4</td>
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<tr>
<td>SC 105 Anatomy and Physiology</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>DH 108 Clinical Dental Hygiene I</td>
<td>1</td>
<td>3</td>
<td>2</td>
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<tr>
<td>EN 100 English Composition</td>
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Second Semester

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<tr>
<td>SC 109</td>
<td>Histology</td>
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<tr>
<td>SC 110</td>
<td>Medical Microbiology</td>
<td>2</td>
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<tr>
<td>PE</td>
<td>Physical Education</td>
<td>0</td>
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<tr>
<td>DH 105</td>
<td>Dental Roentgenology</td>
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<tr>
<td>DH 109</td>
<td>Clinical Dental Hygiene II</td>
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<td>DH 110</td>
<td>Dental Office Procedures</td>
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<th>Credits</th>
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<td>0</td>
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<tr>
<td>DH 203</td>
<td>Methods and Materials in Dental Health Education</td>
<td>2</td>
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<tr>
<td>DH 204</td>
<td>Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>DH 205</td>
<td>Pathology</td>
<td>2</td>
</tr>
<tr>
<td>DH 209</td>
<td>Pharmacology</td>
<td>2</td>
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<tr>
<td>SO 219</td>
<td>Psychology</td>
<td>3</td>
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<td>EN 114</td>
<td>Speech</td>
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Third Semester

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<td>Clinical Dental Hygiene III+</td>
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<tr>
<td>DH 203</td>
<td>Methods and Materials in Dental Health Education</td>
<td>2</td>
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<tr>
<td>DH 204</td>
<td>Nutrition</td>
<td>2</td>
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<tr>
<td>DH 205</td>
<td>Pathology</td>
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<td>DH 209</td>
<td>Pharmacology</td>
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<td>SO 219</td>
<td>Psychology</td>
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Fourth Semester

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<td>DH 201</td>
<td>Clinical Dental Hygiene IV+</td>
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<td>DH 208</td>
<td>Public Health</td>
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<td>DH 220</td>
<td>Dental Specialties</td>
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<td>SO 222</td>
<td>Sociology</td>
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</table>

Total Credits: 67

+ Students are required to provide their own transportation to off campus field experiences.

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Dental Hygiene

**DH101 DENTAL AND ORAL ANATOMY**

(3,2) 4 Cr.

Fundamentals of tooth form and function. The student must draw and carve individual teeth to familiarize herself with the anatomical details. Supporting structures of the mouth and occlusion. The identification of extracted teeth.

**DH105 DENTAL ROENTGENOLOGY**

(2,2) 3 Cr.

To acquaint the student with the nature of the ionizing radiation; the history of x-rays, their production and properties. Theory and practice of exposing, processing, and mounting dental roentgenograms; radiation dosage, radiation hazards, and protective devices for patient and operator. Discussion of extra-oral x-ray techniques, including lateral plates and panographic film is included. Emphasis is placed on the identification of anatomic landmarks and differentiation of these from conditions which indicate abnormality or disease. Discussion and application of the latest recommendations of the National Committee on Radiation Protection and Measurements and other safety devices.
DH108 CLINICAL DENTAL HYGIENE I

(1,3) 2 Cr.

Theory, concepts and practical applications of preventive measures as they relate to the practice of dental hygiene. Student will be taught techniques of instrumentation and theories of preventive dentistry.

DH109 CLINICAL DENTAL HYGIENE II

(2,4) 4 Cr.

A continuation of the practical applications of dental hygiene techniques with supplemental lectures related to the clinical practice of the dental hygienist.
Prerequisite: DH108

DH110 DENTAL OFFICE PROCEDURES

(2,2) 3 Cr.

To acquaint the student with various dental procedures, materials and devices commonly used in dental practice. Emphasis will be placed on the physical and chemical properties of dental materials and how they affect the care and manipulation of the materials in question. Emphasis also will be given to office clerical procedures, job interviews, psychology and motivational aspects of handling dental patients. Stress will be placed on relating the above to the clinical practice of the dental hygienist as well as performance of basic dental laboratory procedures.

DH201 CLINICAL DENTAL HYGIENE III

(0,12) 4 Cr.

Extended clinical training in hospitals and clinics both on and off campus, with pertinent lectures and discussions on recent innovations.
Prerequisite: DH109

DH203 METHODS AND MATERIALS IN DENTAL HEALTH EDUCATION (2,0) 2 Cr.

Procedures of dental health education and use of visual aids as applied to all types of dental programs with emphasis on a school program. Opportunity for observation and practice teaching.

DH204 NUTRITION (2,0) 2 Cr.

The fundamental principles of normal nutrition; the functions of various nutrients and their sources, deficiencies, food values, and the application of nutrition to dental practice.
Prerequisite: CH106

DH205 PATHOLOGY (2,0) 2 Cr.

The fundamentals of microscopic and gross pathology; discussion of general pathologic processes; diseases of the highly specialized dental and periodontal tissues; their etiology and prevention.
Prerequisites: SC105, SC109

DH206 CLINICAL DENTAL HYGIENE IV

(0,12) 4 Cr.

Extended clinical training in hospitals and clinics both on and off campus, with pertinent lectures and discussion on recent innovations.
Prerequisite: DH201

DH208 PUBLIC HEALTH (2,0) 2 Cr.

Scope and activities of Public Health programs with specific reference to various health problems and special emphasis on dentistry in public health.

DH209 PHARMACOLOGY (2,0) 2 Cr.

The principles of drug actions and the uses of more important drugs, especially those used in dentistry. The principles of prescription writing.

DH220 DENTAL SPECIALTIES (2,0) 2 Cr.

Through lecture and discussion the etiology, prognosis, and treatment of various dental specialties will be considered. The emphasis is placed on the role and function of the dental hygienist in the specialty areas.
DH108 CLINICAL DENTAL HYGIENE I  
(1,3) 2 Cr.
Theory, concepts and practical applications of preventive measures as they relate to the practice of dental hygiene. Student will be taught techniques of instrumentation and theories of preventive dentistry.

DH109 CLINICAL DENTAL HYGIENE II  
(2,4) 4 Cr.
A continuation of the practical applications of dental hygiene techniques with supplemental lectures related to the clinical practice of the dental hygienist.
Prerequisite: DH108

DH110 DENTAL OFFICE PROCEDURES  
(2,2) 3 Cr.
To acquaint the student with various dental procedures, materials and devices commonly used in dental practice. Emphasis will be placed on the physical and chemical properties of dental materials and how they affect the care and manipulation of the materials in question. Emphasis also will be given to office clerical procedures, job interviews, psychology and motivational aspects of handling dental patients. Stress will be placed on relating the above to the clinical practice of the dental hygienist as well as performance of basic dental laboratory procedures.

DH201 CLINICAL DENTAL HYGIENE III  
(0,12) 4 Cr.
Extended clinical training in hospitals and clinics both on and off campus, with pertinent lectures and discussions on recent innovations.
Prerequisite: DH109

DH204 NUTRITION (2,0) 2 Cr.
The fundamental principles of normal nutrition; the functions of various nutrients and their sources, deficiencies, food values, and the application of nutrition to dental practice.
Prerequisite: CH106

DH205 PATHOLOGY (2,0) 2 Cr.
The fundamentals of microscopic and gross pathology; discussion of general pathologic processes; diseases of the highly specialized dental and periodontal tissues; their etiology and prevention.
Prerequisites: SC105, SC109

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(0,12) 4 Cr.
Extended clinical training in hospitals and clinics both on and off campus, with pertinent lectures and discussion on recent innovations.
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Scope and activities of Public Health programs with specific reference to various health problems and special emphasis on dentistry in public health.

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DH220 DENTAL SPECIALTIES (2,0) 2 Cr.
Through lecture and discussion the etiology, prognosis, and treatment of various dental specialties will be considered. The emphasis is placed on the role and function of the dental hygienist in the specialty areas.
ELECTRICAL TECHNOLOGY—ELECTRONICS

Professor Alfred Flanter, Chairman

(An ECPD approved Engineering Technology Curriculum)

Electronics offers one of the largest and most varied areas in our modern industrial, economic, and social organization, and as such demands men with a high degree of proficiency in the technical subjects of their field together with supplemental knowledge in allied fields.

The curriculum of Electronics prepares engineering technicians for industrial positions in fields of communication electronics, and industrial electronics, digital electronics, and electronic development.

The increasing application of electrical and electronic equipment makes it difficult for industry to secure qualified technical specialists to develop, install, operate, and maintain that equipment. Students in Electronics receive instruction to meet industrial needs.

Typical Employment Opportunities

- Avionic Technician
- Communication Technician
- Computer Technician
- Customer Engineer
- Electronic Draftsman
- Electronic Technician
- Engineering Aide
- Environmental Test Technician
- Missile Electronics Technician
- Nucleonic Technician
- Radar Technician
- Research Laboratory Technician
- Technical Writer
- Test Technician

ELECTRICAL TECHNOLOGY—ELECTRONICS

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<th>Course</th>
<th>Description</th>
<th>Hours per Week</th>
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<tr>
<td>ET 100</td>
<td>Introduction to Electronics</td>
<td>1 Class 2 Lab.</td>
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<td>ET 101</td>
<td>Electrical Circuits I</td>
<td>5 Class 3 Lab.</td>
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<td>ET 116</td>
<td>Electronic Drafting</td>
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<tr>
<td>MA 124</td>
<td>Mathematics</td>
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<td>EN 100</td>
<td>English Composition</td>
<td>3 Class 0 Lab.</td>
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<td>PE —</td>
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<td>Electrical Circuits</td>
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<tr>
<td>ET 106</td>
<td>Electronics I</td>
<td>3 Class 3 Lab.</td>
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<tr>
<td>MA 125</td>
<td>Mathematics</td>
<td>3 Class 0 Lab.</td>
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<tr>
<td>PH 131</td>
<td>Physics</td>
<td>3 Class 2 Lab.</td>
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<td>EN 101</td>
<td>Introduction to Literature</td>
<td>3 Class 0 Lab.</td>
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<tr>
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<td>Physical Education</td>
<td>0 Class 2 Lab.</td>
</tr>
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<td></td>
<td>15 Class 10 Lab.</td>
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</tbody>
</table>

Credit Hours: 12 10 16
### Course Descriptions

*Numbers in parentheses indicate lecture and laboratory hours per week respectively.*

#### Electrical Technology

**ET100 INTRODUCTION TO ELECTRONICS (1,2) 2 Cr.**

This course is designed to give the student an overall look into electronics technology with the opportunity to use basic systems in a simplified fashion. Use of test equipment and investigating electronics systems and subsystems by observing input and output waveforms and any associated mechanical action. Emphasis is placed on understanding the characteristics of subsystems as building blocks for a complete system. The lectures are devoted to demonstrations, descriptions of electronic systems, and the discussion of job responsibilities and opportunities in the electronics field.

**ET101 ELECTRICITY I (2,3) 3 Cr.**

Alternating current principles involving voltage, current, and power relations in single phase circuits containing resistance, capacitance, inductance, and impedance; series and parallel resonance, and elementary analysis of polyphase circuits. Prerequisite: ET102

**ET102 ELECTRICITY II (2,3) 3 Cr.**

Direct current fundamentals involving series, parallel, and combination circuits, capacitance, inductance, magnetic properties and circuits, d-c instruments, and d-c motors.

**ET103 ELECTRICAL CIRCUITS II (3,3) 4 Cr.**


**ET104 ELECTRICITY III (2,3) 3 Cr.**

Fundamentals of solid state diodes and junction transistors. Devices and circuits are described by their volt-ampere, and in-
put-out put transfer characteristics. Analysis of basic diode circuits and single stage class A amplifiers. D. C. biasing and Q-point calculations; and the use of incremental device models for input-output impedance and current, voltage and power gain.
Prerequisite: ET101

**ET116 ELECTRONIC DRAFTING (0,2) 1 Cr.**
Principles and techniques of drafting applicable to electronic equipment—schematics, graphs, and mechanical layouts.

**ET212 ELECTRONICS (2,3) 3 Cr.**
A basic electronics course applied to the photographic field. The fundamentals of electronic tubes as related to the static and dynamic characteristics of the diode, triode, tetrode, pentode, and multi-element tubes. Principles and application of gas, photosensitive, and cold cathode type tubes.
Prerequisite: ET104

**ET232 ELECTRONICS II (3,3) 4 Cr.**
Junction and field effect transistors and vacuum tube parameters and models. Analysis of RC coupled small signal amplifiers. Single ended and push-pull power amplifiers. Q-point and gain sensitivity to temperature and parameter variations, and stabilization techniques.
Prerequisites: ET103, ET106

**ET233 ELECTRONICS III (3,3) 4 Cr.**
Logic design of combinational and sequential circuits; minimizing techniques, integrated circuits, number systems, arithmetic operations, timing and switching techniques, counters, sequence generators, D/A and A/D converters, shift register applications, and digital information storage and control; gating circuits and multivibrators.
Prerequisite: ET106

**ET234 ELECTRONICS IV (4,3) 5 Cr.**
Prerequisite: ET232

**ET235 ELECTRONICS V (4,3) 5 Cr.**
Tuned circuits and tuned amplifiers. Sinusoidal oscillators. Amplitude modulation, detection and applications. Analysis of typical communications systems. Pulse characteristics of transmission lines.
Prerequisite: ET232

**ET236 SYSTEM CONSTRUCTION AND ANALYSIS (0,3) 1 Cr.**
Construction, testing and circuit analysis of a solid-state system. Emphasis is on providing a wide range of experiences in techniques, procedures, selection and use of test equipment in troubleshooting and analyzing performance of individual circuits within an over-all system.
Prerequisite: ET232
ELECTRO-MECHANICAL TECHNOLOGY*  
*Program not offered in September 1971

PROFESSOR ALFRED FLANTER, Chairman

The curriculum in Electro-Mechanical Technology would prepare students to enter as technicians into areas of specialization within the broad field of electro-mechanical technology identified as: maintenance and troubleshooting; field service; manufacturing and automated processes; research and development; electro-mechanical draftsman.

The Electro-Mechanical Technician tests, trouble-shoots, analyzes, diagnoses, calibrates, and adjusts precision electro-mechanical components, devices, systems, and instruments. Constructs electrical, mechanical and electro-mechanical bread-boards according to specifications for the purpose of evaluation and feasibility studies; assists engineers in the design, specifications, and installation of electro-mechanical systems such as process control equipment; obtain performance data and design information on electro-mechanical components, mechanisms, gears, chains, brakes, sprockets, relays, switches, photo-electric devices, operational amplifiers, oscillators, logic circuit components, pneumatic cylinders and control valves, hydraulic cylinders and fluidic controls, servo-systems, electrical and electronic components from technical literature and other sources and conducts tryout testing of systems or devices, reports results, and modifies to eliminate defects.

Employment Opportunities
Electro-Mechanical Technician

ELECTRO-MECHANICAL TECHNOLOGY

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<th>Hours per Week</th>
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Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

**Electro-Mechanical**

**EM100 ELECTRICAL CIRCUITS (4,3) 5 Cr.**
A course in the theory and practical application of direct and alternating current circuits. No prior knowledge of electricity is required. Emphasis is on understanding functions and characteristics of circuit components, fundamental laws, and applied problem solving. Mechanical analogies are used wherever possible in preparation for subsequent inter-disciplinary studies. Laboratory work coordinates with classroom topics emphasizing understanding of principles along with extension into practical areas, such as: component identification, symbols, and color coding, reading schematic diagrams, selection and use of dc and ac meters and instruments, use of the oscilloscope and signal generators; breadboarding.
Prerequisite: Mathematics I
Co-requisite: Graphics

**EM101 MECHANICAL COMPONENTS & MECHANISMS (2,3) 3 Cr.**
An introduction to mechanical elements of electro-mechanical systems. Individual components and mechanisms are studied in terms of functions and operating characteristics. Selection of components from manufacturers literature based on design or test data. Mechanical elements are treated in integrated electro-mechanical systems in laboratory work and their efforts on input-output characteristics are analyzed. Laboratory sessions make extensive use of breadboard solutions to problems involving mechanisms and electro-mechanical systems. Independent approaches to practical problem solving is stressed.
Prerequisite: Industrial Tools and Materials
Co-requisite: Graphics

**EM102 GRAPHICS (0,3) 1 Cr.**
This course covers the fundamentals of graphical communications, including electrical and mechanical drawings, sketching, graphs and charts, symbols and schematics. Emphasis is on familiarization with drafting tools and instruments, with extensive development of freehand sketching.
EM203 ELECTRICAL MACHINERY (2,3) 3 Cr.

This course is designed to give the electromechanical technician both theoretical and functional knowledge of power electricity and ac and dc machines. Topics include: series and parallel resonant circuits; polyphase circuits; power measurements; transformer action-turns ratio, losses, impedance matching; dc motors and ac machinery control circuits and control equipment. The laboratory provides hands-on experience in operation of electrical machinery and quantitative analysis of performance characteristics.
Prerequisite: Electrical Circuits

EM204 ELECTRO-MECHANICAL DEVICES AND SYSTEMS I (3,3) 4 Cr.

A one-year sequence devoted to a detailed study of integrated electro-mechanical devices, controls, and systems. Emphasis is on basic understandings as well as functions in physical systems. These courses lay the foundation for a wide variety of scientific and industrial applications of interdisciplinary systems.
Prerequisites: Electronics I, Mechanical Components & Mechanisms

EM205 COMPUTER FUNDAMENTALS (2,3) 3 Cr.

This course is designed to familiarize the student with the fundamentals of digital and analog computer systems. In addition to understanding the concepts of computer systems, the student is expected to develop sufficient programming skill to enable him to solve elementary problems on the computer.

EM210 ELECTRO-MECHANICAL DEVICES & SYSTEMS II (3,3) 4 Cr.

Control devices—types of control principles, timers, controllers, automatic control systems—open loop and closed loop control systems, feedback, stability, components and devices applied to systems; applications of control systems to areas of temperature, flow, pressure, and materials handling. Laboratory sessions involve testing and calibration of components and devices; circuit analysis and response characteristics; assembling, adjusting and troubleshooting of integrated electro-mechanical systems.
Prerequisite: Electronics II

EM211 INDUSTRIAL INSTRUMENTATIONS (3,3) 4 Cr.

A course in principles of operation, capabilities, limitations, and practical applications of a variety of measuring, recording, and signaling instruments. Laboratory work emphasizes the electro-mechanical nature of most instrumentation while providing first-hand experience with instruments.
Co-requisites: Electrical-Mechanical Devices and Systems II

EM212 SYSTEMS LABORATORY (0,6) 3 Cr.

An integrating course which ties together all aspects of the curriculum. This laboratory emphasizes analysis and troubleshooting of operational electro-mechanical systems and processes in which faults are intentionally introduced. Systems studied are derived from a wide range of multidiscipline industrial applications. The student is required to demonstrate a substantial degree of independence in problem identification, problem solving, and reporting techniques.
Prerequisite: Eligibility for graduation if all work in progress is successfully completed.
ENGINEERING SCIENCE
PROFESSOR RICHARD I. GAME, Chairman

Purpose
The purpose of the curriculum is to prepare students in the basic areas of science, mathematics, and humanities, qualifying them for further study as third-year students at a senior college where specialization in several fields of engineering, applied mathematics, or applied science may be undertaken.

Typical Employment Opportunities
Graduates of this program ordinarily pursue advanced studies. Where circumstances prevent a graduate from continuing his studies, he is qualified for a position as an engineering aide, research assistant, laboratory technician, or science assistant.

Transfer
The College has made transfer credit arrangements with several local colleges so that students completing the program can transfer directly as third-year students. Students should discuss their individual plans for transfer with the Department Chairman.

ENGINEERING SCIENCE

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**Total Credits Required:** 14-15

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<td>MA 153</td>
<td>Linear Algebra and Differential Equations</td>
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<td>SO or EN</td>
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</table>

**Total Credits Required:** 16-17

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* Electives will be selected in conference with the chairman of the department. Pre-requisite for electives must be minimum grade “C”.

** Must have 2.0 or Department permission.

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### Course Descriptions

*Numbers in parentheses indicate lecture and laboratory hours per week respectively.*

**Engineering Science**

ES201 **ENGINEERING MECHANICS, STATICS** (3,0) 3 Cr.

A fundamental and rigorous vectorial approach to mechanics. The elements of Vector Algebra, and their operations will be reviewed and given physical insight. Equations of Equilibrium, Equivalent Force Systems, and Frictional Forces will be covered in depth. Properties of Surfaces, and an Introduction to Continuum Mechanics, and to Variational Mechanics—Statics will be discussed.

Prerequisites: PH151; concurrent MA152

ES202 **ENGINEERING MECHANICS—DYNAMICS** (3,0) 3 Cr.

A vectorial approach to dynamics of particles, and rigid bodies. Vector integration and differentiation will be employed in solution solving. Methods of Momentum, Relative Motion and Motion of a Body about a Fixed Point will be discussed. Emphasis will be placed on the Energy Method formulation and use of The Lagrangian to formulate the equations of motion of a rigid body will be employed. An introduction to Tensor Analysis notation and use via Inertia Tensor will be included in course content. Elementary vibration theory, and a discussion of dimensional analysis will conclude this course.

Prerequisites: ES201; Concurrent: MA153

ES206 **ENGINEERING CIRCUIT ANALYSIS** (4,0) 4 Cr.

A first course in electrical circuit analysis. Non-electrical circuits are examined in terms of their electrical analogues. Definition of active and passive circuit elements;
Philosophy

HU100 INTRODUCTION TO PHILOSOPHY (3,0) 3 Cr.
Basic concepts and issues of philosophy. Major topics considered are the problems of knowledge, logic, ethics, aesthetics, and metaphysics. (offered in fall)

HU101 HISTORY OF PHILOSOPHY (3,0) 3 Cr.
Significant contributions in the history of philosophy. Selected readings from the works of major philosophers from the Greeks to the present. (offered in spring)

FINE ARTS

Music

HU110 HISTORY OF MUSIC: BEGINNINGS THROUGH BAROQUE (3,0) 3 Cr.
A survey of music literature from its beginnings to the Baroque period. The styles of music such as monophony and polyphony are studied to understand how they were used in Pre-classical, Classical, and Baroque periods. (offered in fall)

HU111 HISTORY OF MUSIC: ROMANTIC THROUGH MODERN (3,0) 3 Cr.
A continuation of HU110. The styles of music such as homophony and heterophony are studied to understand how they were used in the Romantic and Modern periods. (offered in spring)

HU112 VOICE PRODUCTION AND SIGHT SINGING (3,0) 3 Cr.
Presents the techniques of Bel Canto singing. Through the use of syllables and sequentals the students develop the techniques and abilities to read music at sight. (offered in fall)

HU113 ELEMENTARY MUSIC THEORY (3,0) 3 Cr.
An introduction to the symbols of music and how they are used. The study of keys, scales, modes and triads will lead to the harmonization of melodies. Each student is encouraged to write an original composition as a partial fulfillment of the requirements of the course. (offered in spring)

HU120 BASIC DRAWING (2,3) 3 Cr.
Includes an examination of the principles of depicting illusory form and dimension through the use of perspective, light and shade, and color. Students practice drawing techniques to fortify their understanding of art forms. (offered in fall)

HU121 BASIC DESIGN (2,3) 3 Cr.
The principles of combining line, form and color into meaningful patterns. Two and three dimensional exercises are included. Three dimensional exercises may serve a student who wishes to study sculpture at a later date. (offered in fall)

HU122 PAINTING (2,3) 3 Cr.
Students utilize the principles learned in basic courses. Representational and abstract painting are practiced. Various media are used. (offered in spring)

HU123 ART HISTORY (3,0) 3 Cr.
An examination of art based on principles and techniques established in drawing and design courses. The various uses to which these principles and techniques have been put in man's artistic history are the concerns of the course. (offered in spring)

HU130 SPEECH-THEATER (3,0) 3 Cr.
A course designed to develop skill in the preparation and delivery of expository and persuasive speeches, to provide experience in committee action and group discussion, and to improve the student's voice and diction. (offered fall and spring)

HU131 VOICE AND ARTICULATION (3,0) 3 Cr.
A study of the physiological, psychological, and social bases of voice and articulation. The goal is the improvement of the student's speech habits. Laboratory hours will be arranged. (offered in fall)

HU132 ORAL INTERPRETATION OF LITERATURE (3,0) 3 Cr.
Theory and practice of effective oral reading based on analysis of content. Selection, analysis, rehearsal and presentation of literature: prose, poetry, and drama. (offered in spring)
HU133 INTRODUCTION TO THE THEATER (3,0) 3 Cr.
A survey of the elements of theatrical art, including script, acting, scenery, lighting, costumes, and the roles of the various members of professional production: producer, director, actor, and audience. Representative plays, playwrights, and styles from ancient Athens to off-Broadway are examined. (offered in fall)

HU134 PLAY PRODUCTION (3,0) 3 Cr.
Principles and techniques of play production from script selection to performance: including casting, rehearsals, set design, lighting, costumes, make up, theatrical management. (offered in spring)
FOOD PROCESSING TECHNOLOGY

Professor George G. Cook, Chairman

Over two hundred million people in the United States today must be assured of an adequate, satisfying food supply. More food as well as more food research and new food ideas constitute a never ending search.

More than fifty per cent of the food items presently on our grocery shelves were not there ten years ago. There will be greater changes in the future. Freeze-dried, radiated, nitrogen frozen, and synthetic foods are now replacing many forms we currently know and accept. The field of foods is one of the most vital, most interesting, and well paying career areas open to young men and women. Challenging opportunities exist in a variety of capacities: production, quality control of products, merchandising and sales, research and development of foods and services.

Students of Food Processing Technology study and practice in clean, modern laboratories which are under federal, state and local health jurisdiction and control. All students are expected to comply with these regulations.

Please note, in another section of this catalogue, the scholarships offered to students enrolled in Food Processing Technology. These scholarships reflect the great interest the food industry has in students in this program. Students seeking these awards should be mindful that they are based on scholarship, leadership, effort, ambition, industry, personality, financial need, and plans for the future.

*Typical Employment Opportunities*

- Food Broker
- Food Buyer
- Food Plant Quality Control
- Federal-State Inspection of Food Products
- Private Food Products Inspection
- Inspectors, Health & Environment Departments
- Food Research and Development
- Food Packaging
- Food Testing and Analysis
- Merchandising & Distribution of Foods
- Fluid Milk Processing
- Frozen Food Sales and Supervision
- Dairy Plant Quality Control
- Food Advertising
- Prepared and Pre-Cooked
- Convenience Food Production
- Food Plant Management
- Food Equipment Sales
- Sanitation Specialist
- Food Condiment Sales
- Institutional Frozen Foods Sales
- Food Management
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<td>FT 101</td>
<td>Food Processing</td>
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<td>FT 107</td>
<td>Nutrition</td>
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<td>BA 131</td>
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<td>CH 104</td>
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<td>Food Processing Equip.</td>
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<td>Pre-Cooked Frozen Foods</td>
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<td>SC 111</td>
<td>Microbiology of Foods</td>
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Total Credits Required: 65
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Food Processing Technology

FT100 INTRODUCTION TO FOOD TECHNOLOGY (1,0) 1 Cr.

This course has been designed to relate to the new freshman student the scope of food technology and how his or her training in the next two years will provide them with the skills to enter the food technology field or to transfer on for more education at a senior college. Selected speakers will be used to enrich the course in special areas of food technology. Various areas will be discussed by the student and instructor with reference to the development of the industry as a whole.

FT107 NUTRITION (3,0) 3 Cr.

The basic concepts of human nutritional needs; proteins, carbohydrates, fats, minerals, vitamins for the infant, adolescent, adult and elderly. Each student will learn how to apply the basic principles of nutrition to himself and others.

FT101 FOOD PROCESSING (2,3) 3 Cr.

An introduction to food processing and preservation techniques, this course includes laboratory practice in canning, freezing, freeze drying, ice cream and cheese making, milk processing (pasteurization, homogenization, clarification) and jelly manufacturing. All classes use standard equipment for the particular training and use sufficient raw material to provide a clear understanding of the processes involved. Where applicable quality control techniques are directly applied. Quality, grades and standards, yield and composition, packaging and consumed acceptance are discussed and analyzed.

FT102 FOOD PREPARATION (2,3) 3 Cr.

The purpose of this course is to introduce to the student the basics of food preparation, and determine through lecture and laboratory assignments how and why foods react as they do under various conditions. Preparing foods to attain the best quality and yield possible is stressed as a primary concept. Topics such as proper storage and transportation of foods, govt. grades and standards and sanitation are studied and applied. In addition costs, consumer acceptance, and nutritional value of foods are studied and evaluated.

FT108 PRINCIPLES OF FOOD PREPARATION (2,2) 3 Cr.

The basic principles of food preparation are included and applied in lecture and laboratory. Selecting foods for an adequate diet; buying food within a budget; and the preparation so as to conserve nutrient value, flavor, and texture are included. Management of time, energy and money in food preparation is discussed. This course is designed for the non-food major.

FT201 DAIRY MANUFACTURE (2,3) 3 Cr.

The commercial manufacture of ice cream, sherbets and ices; ingredients used and their effect on quality of the product; standardization of the ice cream mix, freezing and hardening equipment, batch freezer, continuous and soft serve freezers. The manufacturing, packaging and merchandising of ice cream and frozen desserts. Butter making, concentrated milk solids, vacuum pan evaporation of various foods and milk. The use and theory of Freeze-Drying and study of the techniques of freeze-drying foods and other products.

FT202 FOOD PROCESSING EQUIPMENT (2,2) 3 Cr.

Basic mechanical principles; power transmission; electrical power and equipment; hydraulics and pumping; heat measurement, transfer, and control; steam and its use in the food plant; principles of refrigeration; insulation and cold storage rooms; heaters-coolers and heat exchange equipment.
FT203 PRE-COOKED FROZEN FOODS (2,3) 3 Cr.
The processing of fresh food materials purchased at retail into prepared or pre-cooked convenience frozen foods. Pies, cakes, biscuits, rolls, entrees of meat, fish and poultry, salads and Nationality Specialty food items are made and the cooking techniques studied. Comparisons are drawn of items processed using measurements vs weight, ingredient and cost percentages are calculated; rudiments of marketing are studied as well as packaging. Point of purchase, and Advertising of food items.

FT204 COMMERCIAL PROCESSING OF PRE-COOKED & SPECIALTY CONVENIENCE FROZEN FOODS (2,3) 3 Cr.
Based on cooking fundamentals acquired in FT203 pre-cooked and Specialty frozen foods items are processed in quantity. Considering consumer interests and demands foods chosen to be processed are of particular interest to the convenience food industry. Problems dealing with quantity, uniformity, consistency, mass, heat transfer, wholesale purchasing, markups and margins advertising and marketing are studied and applied to specific food items manufactured in the laboratories. Food Plant visits, interviews with food officials.

FT205 DAIRY AND FERMENTED FOODS (2,3) 3 Cr.
Manufacture of cultured milk products; sour cream, buttermilk, yogurt, propagation of cultures, freeze-drying cultures. Making of Cheddar cheese, Blue cheese, Cottage cheese and Cream cheese. Fermentation of Cucumbers, Sauerkraut and fruit juices. Aging of fermented food products, and the organolyptic analysis of fermented foods. Prerequisite: SCI11

FT206 QUALITY CONTROL OF FOODS (2,2) 3 Cr.
Special tests on food products such as Babcock test, acidity test, hydrometer tests, moisture, solids, salt, ash, and other extraction fats. Collecting samples, care and preparation of samples. Enzymatic tests on milk and fresh food products. Federal and State standards for food products. Special problems of production. Prerequisite: SCI11

FT208 SALESMAINSHP (3,0) 3 Cr.
The fundamentals of selling with application to the sale of foods, food machinery, and motivational advertising; the salesman's opportunities, responsibilities, duties, knowledge required, and experience necessary for success; practice in applying and demonstrating sales techniques.

FT210 THE FOOD INDUSTRY (1,2) 2 Cr.
This course is intended to help students integrate various concepts which they have studied and to relate these to the field of food technology. The performance of an extensive faculty approved research or curriculum related project and to present a written and oral report to the class. Various professors of Chemistry, Bacteriology and Food Processing will be invited to hear oral reports. Industry representatives will also be invited at various times.
FOREIGN LANGUAGES
PROFESSOR LEONARD ISEMONGER, Chairman

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

FL100 FRENCH I (Elementary) (3,0) 3 Cr.
A course in the four basic skills of speaking, understanding, reading, and writing French. The audio-lingual technique is employed in conjunction with the frequent use of the electronic language laboratory. Conversational French is emphasized.

FL101 FRENCH II (Elementary) (3,0) 3 Cr.
A continuation of French I.
Prerequisite: French I or an equivalent course of study and permission of the department chairman.

FL102 FRENCH III (Intermediate) (3,0) 3 Cr.
A continuation of the four basic skills of French. Primary emphasis is reading non-technical material in French for understanding and vocabulary development.
Prerequisite: French II or an equivalent course of study and permission of the department chairman.

FL103 FRENCH IV (Intermediate) (3,0) 3 Cr.
A continuation of French III with more emphasis on reading literary material in French and a review of French structural grammar by the explication de texte method.
Prerequisite: French III or an equivalent course of study and permission of the department chairman.

FL104 FRENCH V (Advanced) (3,0) 3 Cr.
A brief introduction to French literature and a particular in-depth study of a period or genre of French literature. French is the primary mode of communication in this course.
Prerequisite: French IV or an equivalent course of study and permission of the department chairman.

FL105 FRENCH VI (Advanced) (3,0) 3 Cr.
A continuation of French V.
Prerequisite: French V or an equivalent course of study and permission of the department chairman.

FL111 GERMAN I (Elementary) (3,0) 3 Cr.
A course in the four basic skills of speaking, understanding, reading, and writing German. The audio-lingual technique is employed in conjunction with the frequent use of the electronic language laboratory. Conversational German is emphasized.

FL112 GERMAN II (Elementary) (3,0) 3 Cr.
A continuation of German I.
Prerequisite: German I or an equivalent course of study and permission of the department chairman.

FL113 GERMAN III (Intermediate) (3,0) 3 Cr.
A continuation of the four basic skills of German. Primary emphasis is reading non-technical material in German for understanding and vocabulary development.
Prerequisite: German II or an equivalent course of study and permission of the department chairman.

FL114 GERMAN IV (Intermediate) (3,0) 3 Cr.
A continuation of German III with more emphasis on reading literary material in German and a review of German structural grammar by the explication de texte method.
Prerequisite: German III or an equivalent course of study and permission of the department chairman.

FL115 GERMAN V (Advanced) (3,0) 3 Cr.
A brief introduction to German literature and a particular in-depth study of a period or genre of German literature. German is the primary mode of communication in this course.
Prerequisite: German IV or an equivalent course of study and permission of the department chairman.
FOREIGN LANGUAGES

Professor Leonard Isemonger, Chairman

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

FL 100 FRENCH I (Elementary) (3,0) 3 Cr.
A course in the four basic skills of speaking, understanding, reading, and writing French. The audio-lingual technique is employed in conjunction with the frequent use of the electronic language laboratory. Conversational French is emphasized.

FL 101 FRENCH II (Elementary) (3,0) 3 Cr.
A continuation of French I.
Prerequisite: French I or an equivalent course of study and permission of the department chairman.

FL 102 FRENCH III (Intermediate) (3,0) 3 Cr.
A continuation of the four basic skills of French. Primary emphasis is reading non-technical material in French for understanding and vocabulary development.
Prerequisite: French II or an equivalent course of study and permission of the department chairman.

FL 103 FRENCH IV (Intermediate) (3,0) 3 Cr.
A continuation of French III with more emphasis on reading literary material in French and a review of French structural grammar by the explication de texte method.
Prerequisite: French III or an equivalent course of study and permission of the department chairman.

FL 104 FRENCH V (Advanced) (3,0) 3 Cr.
A brief introduction to French literature and a particular in-depth study of a period or genre of French literature. French is the primary mode of communication in this course.
Prerequisite: French IV or an equivalent course of study and permission of the department chairman.

FL 111 GERMAN I (Elementary) (3,0) 3 Cr.
A course in the four basic skills of speaking, understanding, reading, and writing German. The audio-lingual technique is employed in conjunction with the frequent use of the electronic language laboratory. Conversational German is emphasized.

FL 112 GERMAN II (Elementary) (3,0) 3 Cr.
A continuation of German I.
Prerequisite: German I or an equivalent course of study and permission of the department chairman.

FL 113 GERMAN III (Intermediate) (3,0) 3 Cr.
A continuation of the four basic skills of German. Primary emphasis is reading non-technical material in German for understanding and vocabulary development.
Prerequisite: German II or an equivalent course of study and permission of the department chairman.

FL 114 GERMAN IV (Intermediate) (3,0) 3 Cr.
A continuation of German III with more emphasis on reading literary material in German and a review of German structural grammar by the explication de texte method.
Prerequisite: German III or an equivalent course of study and permission of the department chairman.

FL 115 GERMAN V (Advanced) (3,0) 3 Cr.
A brief introduction to German literature and a particular in-depth study of a period or genre of German literature. German is the primary mode of communication in this course.
Prerequisite: German IV or an equivalent course of study and permission of the department chairman.
FL116 GERMAN VI (ADVANCED) (3,0) 3 Cr.
A continuation of German V.
Prerequisite: German or an equivalent course of study and permission of the department chairman

FL141 SPANISH I (Elementary) (3,0) 3 Cr.
A course in the four basic skills of speaking, understanding, reading, and writing Spanish. The audio-lingual technique is employed in conjunction with the frequent use of the electronic language laboratory. Conversational Spanish is emphasized.

FL142 SPANISH II (Elementary) (3,0) 3 Cr.
A continuation of Spanish I.
Prerequisite: Spanish I or an equivalent course of study and permission of the department chairman.

FL143 SPANISH III (Intermediate) (3,0) 3 Cr.
A continuation of Spanish III with more Spanish. Primary emphasis is reading non-technical material in Spanish for understanding and vocabulary development.
Prerequisite: Spanish II or an equivalent course of study and permission of the department chairman.

FL144 SPANISH IV (Intermediate) (3,0) 3 Cr.
A continuation of Spanish II, with more emphasis on reading literary material in Spanish and a review of Spanish structural grammar by the explication de texte method.
Prerequisite: Spanish III or an equivalent course of study and permission of the department chairman.

FL145 SPANISH V (Advanced) (3,0) 3 Cr.
A brief introduction to Spanish literature and a particular in-depth study of a period or genre of Spanish literature. Spanish is the primary mode of communication in this course.
Prerequisite: Spanish IV or an equivalent course of study and permission of the department chairman.

FL146 SPANISH VI (ADVANCED) (3,0) 3 Cr.
A continuation of Spanish V.
Prerequisite: Spanish V or an equivalent course of study and permission of the department chairman.
The Graphic Arts curriculum is primarily designed to prepare graduates for mid-management positions in the industry. Students receive instruction in all basic technical areas to prepare them for such responsibilities. This background education includes printing processes, copy preparation, typesetting, paste-up, photography, platemaking, color technology, printing and related considerations of paper and ink. Relationships between the techniques of graphic arts and the requirements of advertising are continually explored throughout the course.

The broad program of lectures and laboratory experiences is supplemented by field trips to newspapers and commercial printing plants. Students are also given opportunities to demonstrate special aptitudes in work projects or to follow individual interests in supplemental research assignments.

**Typical Employment Opportunities**

<table>
<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Advertising Manager</td>
<td>Media Buyer</td>
<td>Art Director</td>
</tr>
<tr>
<td>Account Executive</td>
<td>Printing Buyer</td>
<td>Typographer</td>
</tr>
<tr>
<td>Copywriter</td>
<td>Printing Estimator</td>
<td>Printing Salesman</td>
</tr>
<tr>
<td>Advertising Artist</td>
<td></td>
<td>Office Manager</td>
</tr>
<tr>
<td>Production Assistant</td>
<td></td>
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<tr>
<td>Assistant Advertising Manager</td>
<td></td>
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<tr>
<td>Space Salesman</td>
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<tr>
<td>Merchandising Manager</td>
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**GRAPHIC ARTS AND ADVERTISING TECHNOLOGY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>First Semester</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>GA 100</td>
<td>Graphic Arts I</td>
<td>3</td>
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<tr>
<td>GA 101</td>
<td>Visual Fundamentals</td>
<td>3</td>
<td>0</td>
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<tr>
<td>BA 111</td>
<td>Business Organization</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>EN 100</td>
<td>English Composition</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>PH 112</td>
<td>Physical Science</td>
<td>3</td>
<td>0</td>
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<tr>
<td>PE —</td>
<td>Physical Education</td>
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**Total:** 14 hours per week, 16 credit hours
### Second Semester

<table>
<thead>
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<th>Description</th>
<th>Credits</th>
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<tr>
<td>GA 102</td>
<td>Typography</td>
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<tr>
<td>GA 103</td>
<td>Layout and Printing Design</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>BA 151</td>
<td>Business Mathematics</td>
<td>3</td>
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<td>BA 234</td>
<td>Advertising Principles</td>
<td>3</td>
<td>0</td>
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<tr>
<td>EN 101</td>
<td>Introduction to Literature</td>
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<td>0</td>
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<td>CH 103</td>
<td>Chemistry</td>
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### Third Semester (Advertising)

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<tr>
<td>AA 201</td>
<td>Copywriting</td>
<td>2</td>
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<tr>
<td>BA 131</td>
<td>Marketing I</td>
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<tr>
<td>SO 206</td>
<td>Economics</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<td>SO 219</td>
<td>Psychology</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>HU —</td>
<td>Humanities Elective</td>
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<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GA —</td>
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<td>3</td>
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<td><strong>Total</strong></td>
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### Fourth Semester (Advertising)

<table>
<thead>
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<th>Description</th>
<th>Credits</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GA 200</td>
<td>Graphic Arts II</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<tr>
<td>BA 237</td>
<td>Advertising Media</td>
<td>3</td>
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<td>3</td>
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<tr>
<td>AA 224</td>
<td>Advertising Procedures</td>
<td>2</td>
<td>2</td>
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<tr>
<td>GA 203</td>
<td>Seminar</td>
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<td>1</td>
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<td>SO —</td>
<td>Social Science Elective</td>
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<td>0</td>
<td>3</td>
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<tr>
<td>GA —</td>
<td>Graphic Arts Elective</td>
<td>2</td>
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<td><strong>Total</strong></td>
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**Total Credits:** 68

### Third Semester (Graphic Arts)

<table>
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<th>Hours</th>
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<tbody>
<tr>
<td>BA 161</td>
<td>Business Law I</td>
<td>3</td>
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<tr>
<td>GA 200</td>
<td>Graphic Arts II</td>
<td>2</td>
<td>3</td>
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<tr>
<td>SO 206</td>
<td>Economics</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>SO 219</td>
<td>Psychology</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>HU —</td>
<td>Humanities Elective</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GA —</td>
<td>Graphic Arts Elective</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<tr>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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### Fourth Semester (Graphic Arts)

<table>
<thead>
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<th>Course</th>
<th>Description</th>
<th>Credits</th>
<th>Hours</th>
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</tr>
</thead>
<tbody>
<tr>
<td>GA 204</td>
<td>Production Management</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>GA 201</td>
<td>Graphic Arts Production</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>GA 202</td>
<td>Printing Estimation</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GA 203</td>
<td>Seminar</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>SO —</td>
<td>Social Science Elective</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>GA —</td>
<td>Graphic Arts Elective</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
<td><strong>1017</strong></td>
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</table>
Students take the same courses in the first year, and select either Graphic Arts or Advertising courses for the second year.

### Electives—Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AA 105</td>
<td>Design Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>AA 211</td>
<td>Photo Retouching</td>
<td>6</td>
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<tr>
<td>AA 219</td>
<td>Photography</td>
<td>3</td>
</tr>
<tr>
<td>BA 260</td>
<td>Statistics</td>
<td>0</td>
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<tr>
<td>GA 302</td>
<td>Color Reproduction</td>
<td>3</td>
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<tr>
<td>SS 101</td>
<td>Typewriting</td>
<td>3</td>
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<tr>
<td>EN 114</td>
<td>Speech</td>
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</table>

### Electives—Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA 106</td>
<td>Figure Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>AA 209</td>
<td>Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>AA 231</td>
<td>Copywriting II</td>
<td>0</td>
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<tr>
<td>BA 135</td>
<td>Salesmanship</td>
<td>0</td>
</tr>
<tr>
<td>BA 240</td>
<td>Consumer Behavior</td>
<td>0</td>
</tr>
<tr>
<td>GA 301</td>
<td>Traffic Management</td>
<td>3</td>
</tr>
<tr>
<td>GA 303</td>
<td>Photo Offset Printing</td>
<td>3</td>
</tr>
</tbody>
</table>

### Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

#### Graphic Arts

**GA100 GRAPHIC ARTS I (3,0) 3 Cr.**


**GA101 VISUAL FUNDAMENTALS (2,3) 3 Cr.**

Study of the elements and principles of visual representation: line, shape, texture, value, color, contrast, emphasis, rhythm, repetition. Geometric and organic designs. Use of form and space.

**GA102 TYPOGRAPHY (3,0) 3 Cr.**

The function of type, identification and specification. Copyfitting, proofreading, mark-up of proofs. History of type and modern composition methods such as linotype, monotype and phototypesetting.

**GA103 LAYOUT AND PRINTING DESIGN (2,3) 3 Cr.**

Planning and designing advertising copy for reproduction. Use of roughs, thumbnails, comprehensives, tracings, paste-ups, mechanicals, veloxes, screens, photostats. Photographic reproductions and enlargements.

**GA200 GRAPHIC ARTS II (2,3) 3 Cr.**


**GA201 GRAPHIC ARTS PRODUCTION (2,4) 4 Cr.**

Contemporary formats in printing production: work-and-turn, sheetwise, tumble sheet, work-and-shift and other structural impositions. Binding methods and requirements. Setting up specifications to control accuracy.

**GA202 PRINTING ESTIMATION (3,0) 3 Cr.**

Study of printing papers and prices as related to impositions and press operations. Comparisons of plate costs, reproduction media, preparation and material costs. Time, service and labor charges. Estimating typical jobs.
GA203 SEMINAR (0,3) 1 Cr.
A study of the advertising and graphic arts business on Long Island. Exploring opportunities for employment. Contact with industry through field trips and speakers.

GA204 PRODUCTION MANAGEMENT (3,0) 3 Cr.
Developing efficient production methods from layout to finished product. Work schedules, materials, liaison, personnel supervision, fringe benefits, wages and hours, plant layout, principles of management.

GA301 TRAFFIC MANAGEMENT (3,0) 3 Cr.
In-plant traffic procedures as used in advertising agencies, commercial plants, publishing houses, and direct mail houses. Use of job tickets, purchasing and ordering forms, postal regulations. Checking and billing.

GA302 COLOR REPRODUCTION (2,3) 3 Cr.
Color reproduction in advertising and commercial literature. Methods of color separation, color analysis, flexichrome process, ROP color, kinds of inks, relation to paper stock. Problems in ink and color matching.

GA303 PHOTO OFFSET PRINTING (3,0) 3 Cr.
The photo offset printing method from layout to finished job. Type and art preparation, photographic reproduction of line and halftone copy, stripping, platemaking, presswork. Color and black-and-white reproduction.
LIBERAL ARTS

DR. WILLIAM J. REILLY, Chairman

This two-year program leads to the Associate in Arts degree and is designed to offer the first two years of college liberal arts and sciences. After successfully completing the program, students may transfer to other colleges for the final two years of study for the baccalaureate degree, or they may seek employment in positions requiring two years of college.

All students will take courses in foreign languages, the humanities, mathematics, physical education, science, and the social sciences. Although a student will have opportunity to elect courses, the selection of an area of specialization will not be made until the third year. A variety of independent study opportunities will be available to students whose academic achievement is noteworthy.

LIBERAL ARTS AND SCIENCES

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EN 100 English Composition</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>SO 214 History of Western Civilization</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>MA — Math.*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>SC 133 Gen. Bio. or CH 113 Chem. or PH 131 Physics</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>ML — Modern Language**</td>
<td>3</td>
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<tr>
<td>PE — Physical Education</td>
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<td>1</td>
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<tr>
<td></td>
<td>15</td>
<td>17</td>
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</tbody>
</table>

Second Semester

| EN 101 Introduction to Literature            | 3              | 3            |
| SC 134 Gen. Bio. or CH 114 Chem. or PH 132 Physics | 3              | 3            |
| MA — Mathematics                             | 3              | 4            |
| SO 215 History of Western Civilization       | 3              | 3            |
| ML — Modern Language**                       | 3              | 3            |
| PE — Physical Education                      | 0              | 1            |
|                                             | 15             | 17           |

Third Semester**

| EN 104 English Literature                    | 3              | 3            |
| MA — Mathematics Elective                    | 3              | 3            |
| SC — Elective in Biology, Chemistry or Physics | 3              | 4            |
| SO — Social Science Elective                 | 3              | 3            |
| ML — Modern Language Elective                | 3              | 3            |
| HU — Humanities Elective                     | 3              | 3            |
| FA — Fine Arts Elective                      | 3              | 3            |
|                                             | 15             | 15-17        |
**Fourth Semester***

<table>
<thead>
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<td>English Literature</td>
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<tr>
<td>MA</td>
<td>Mathematics Elective</td>
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<tr>
<td>SC</td>
<td>Elective in Biology, Chemistry or Physics</td>
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<tr>
<td>SO</td>
<td>Social Science Elective</td>
<td>3</td>
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<tr>
<td>ML</td>
<td>Modern Language Elective</td>
<td>3</td>
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<tr>
<td>HU</td>
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<tr>
<td>FA</td>
<td>Fine Arts Elective</td>
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<td><strong>15</strong></td>
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</tbody>
</table>

* Each student will take MA 100, MA 105 or MA 135, depending on how many units of high school mathematics he has successfully completed.

** A student entering without a foreign language must select a language and take twelve credits in that language. A student entering with two or more years of high school instruction in a foreign language may elect to continue with that language or may begin another language. If he choses to continue he will be placed in the appropriate level of language instruction based on results of a placement examination and must take a minimum of 6 credits in that language. If a student chooses to begin a new language, he must take 12 credits in that language.

*** In addition to EN 104-105, a second year student must select a sequence of credits in each of four of the other areas listed. Choice of areas of study will be made after consultation with an adviser.

A student who plans a science emphasis may, under advisement, choose two sciences. He will then choose credit sequences in only two of the other areas.

N.B. See curriculum sections for descriptions of liberal arts and sciences courses.
MECHANICAL TECHNOLOGY
(An ECPD approved Engineering Technology Curriculum)
PROFESSOR FRANK PYNE, Chairman

The Mechanical Technology graduate is in increasing demand in today's world of sophisticated manufacturing methods and newly-developed metal alloys and plastics. These have come about through the advancement of our scientific frontiers.

The program of studies is designed around two strong cores: general studies, and technical specialties. General studies involve English, Social Sciences, Mathematics, and Physical Science. This gives the technician a strong background in the ability to solve problems in a literal and quantitative sense.

The technical specialty courses have been developed to utilize the general studies core in preparing the graduate to enter industry in the employment opportunities listed below. The knowledge and operations taught are based upon studies made of our graduates in industry, advice from our industrial consultants, and from criteria established by accrediting engineering societies.

Our well-equipped laboratories are used to provide an experimental and operative basis for understanding and verifying basic classroom instruction. Through this curriculum's technical societies, faculty counseling, and field trips, the student expands his knowledge and strengthens his understanding of the general and technical relationships in our changing society.

Typical Employment Opportunities

Laboratory Technician
Product Designer
Machine Designer
Purchasing Agent
Metallurgical Technician
Quality Control Specialist
Methods Engineer
Technical Writer
Manufacturing Engineer
Tool Designer
Numerical Control Programmer

MECHANICAL TECHNOLOGY

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Credit</th>
<th>Week Lab.</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 102 Graphics</td>
<td>0</td>
<td>4</td>
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<tr>
<td>MT 107 Engineering Materials and Processes</td>
<td>1</td>
<td>2</td>
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<tr>
<td>MT 111 Machine Tools I</td>
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<tr>
<td>MA 124 Mathematics</td>
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<tr>
<td>PH 131 Physics</td>
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<tr>
<td>PE — Physical Education</td>
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<td><strong>14</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>
### Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

#### Mechanical Technology

**MT100 DRAFTING (2,3) 3 Cr.**

A developmental course in drafting designed to provide a general background in graphics and drafting methods. The course format is arranged to provide ample time for regular students to complete assignments, while permitting advanced students to work at an accelerated rate.

**MT102 GRAPHICS (0,4) 2 Cr.**

This course combines basic drafting principles and practices with specialty emphasis to suit the requirements of student's curriculum.

*Air Conditioning Technology*—construction, plans and details, wiring and piping diagrams.

#### Automotive Technology

*Technical sketching, gears and cams.*

#### Mechanical Technology

*An introduction to descriptive geometry, gear and cam design, industrial standards.*

**MT103 MANUFACTURING PROCESSES (2,3) 3 Cr.**

Methods of manufacturing metal and plastic materials. Casting, hot and cold working, heat treating, machining, welding, brazing and soldering, sheet metal processes.

**MT105 MECHANICS (3,0) 3 Cr.**

Statics: Force system and static equilibrium; moments, couples, and simple structures. Centroids and moments of inertia. Prerequisites: PH131, MA124
MT107 ENGINEERING MATERIALS AND PROCESSES (1,2) 2 Cr.
A survey in engineering materials and processing methods. Ferrous, non-ferrous, ceramic and polymer materials are discussed considering their unique behavior and adaptability to various shearing, forming, foundry, chemical, electrical and welding processes. The physical and mechanical properties of engineering materials are investigated through selected experimental activity and related technical reporting. Laboratory demonstrations and field trips.

MT111 MACHINE TOOLS I (1,4) 2 Cr.
The theory and operation of the Engine Lathe is emphasized. Also included is the drill press, shaper, related measuring tools, geometrics of cutting tools and operation sheet writing.

MT112 MACHINE TOOLS II (1,4) 2 Cr.
The theory and operation of machine tools such as vertical and universal milling machines, gear shaper, numerical control drilling—milling, radial drill press, and contour saw. Emphasis is placed on speed and feeds, tool selection, set ups, operation sheet writing, and making N. C. tapes.
Prerequisite: MT111

MT166 DESCRIPTIVE GEOMETRY (0,4) 2 Cr.
Graphic analysis and solution to problems involving spatial relationships from the core of this course. Position of points, lines, surfaces in space are determined as well as the clearance, interference, intersection and development of geometric elements.
Prerequisite: MT102

MT201 FLUID MECHANICS (3,0) 3 Cr.
An introductory study of fluids at rest and in motion. Energy equations, dimensional analysis, flow in pipes, fluid machinery, measurement techniques.
Prerequisite: MA125, MT105

MT202 MANUFACTURING ANALYSIS (3,4) 4 Cr.
Advanced machine tool and manufacturing engineering methods. Theory and practice in grinding, hobbing, turret lathe, screw machine, tracer lathe, numerical control—contour milling and lathe contouring, electrical discharge machining, and other selected manufacturing methods.
Prerequisite: MT112

MT203 METALLURGY (2,3) 3 Cr.
An introductory course in physical metallurgy including: atomic bonding, crystal structure and imperfections, elastic and plastic deformation, mechanical behavior, single and multiphase polycrystals, phase equilibria, constitution of ferrous and non-ferrous metals and alloys, recovery recrystallization and grain growth, precipitation, hardening, heat treatment of steel, corrosion, fibrous composites and powder metallurgy. Students submit technical reports reflecting results from selected experimental activities designed to verify theory being discussed. Research problems are assigned and presented to peers for discussion.
Prerequisite: MT107

MT204 PRODUCTION CONTROL (2,2) 3 Cr.
Analysis and control of production operations. Study of principles, concepts and techniques relative to the design production systems and their control. Students projects include design of plant facility, production and flow charts.
Prerequisites: MT202, MT207

MT205 QUALITY CONTROL (1,3) 2 Cr.
Industrial inspection methods applied to dimensional control of precision manufactured items. Theory and practice of metrology devices such as; standard gages, gage blocks, electronic and optical comparators, etc. Quality control organizational structure and statistical quality control is emphasized.
Prerequisites: MT112, MT102

MT206 STRENGTH OF MATERIALS (3,0) 3 Cr.
Basic stress strain relationships, interpretation of physical test data, applications in design practice. Direct axial stresses, torsional stress, and flexural stress; deformations and modes of failure. Problems in beam, column and shaft design, welded and riveted joints, and pressure vessels.
Prerequisites: MA125, MT106

MT207 TOOL DESIGN (2,3) 3 Cr.
Design of production tooling—drill jigs, milling fixtures, gauges and other process tooling. Study and design of pressworking tooling such as compound, progressive, forming and other manufacturing processes.
Prerequisite: MT112, MT102
MEDICAL LABORATORY TECHNOLOGY

Professor Robert Rothstein, Acting Coordinator

This curriculum prepares students for employment in hospital laboratories, private and government clinical and industrial laboratories, blood banks, and medical research laboratories. Graduates of this program are qualified for immediate employment, may continue their training for A.S.C.P. registry, or may become Registered Associate Medical Technologists in the N.Y. State Registry of Medical Technologists. Many graduates transfer to four year colleges to matriculate for a Baccalaureate degree.

Typical Employment Opportunities

Hospital Medical Laboratory Technician
Doctor's Laboratory Technician
Clinical Laboratory Technician
Research Technician

MEDICAL LABORATORY TECHNOLOGY

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tr>
<td>SC 136 Botany</td>
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<tr>
<td>SC 137 Zoology</td>
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<td>CH 107 General Chemistry</td>
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</tr>
<tr>
<td>MA 105 College Algebra or MA 100 Math</td>
<td>3</td>
<td>3</td>
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<td>EN 100 English Composition</td>
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<tr>
<td>SC 225 Parasitology</td>
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</tr>
<tr>
<td>SC 105 Anatomy and Physiology</td>
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<td>4</td>
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<tr>
<td>CH 110 Introduction to Organic Chemistry</td>
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<td>4</td>
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<tr>
<td>MA 110 Statistics</td>
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<tr>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>ML 214 Diagnostic Bacteriology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ML 210 Hematology and Renal Physiology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ML 215 Serology and Immunology</td>
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<tr>
<td>SO — Social Science+</td>
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<td>CH 204 Biochemistry</td>
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<td>Total</td>
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</table>
## Course Descriptions

*Numbers in parentheses indicate lecture and laboratory hours respectively.*

### Medical Laboratory Technology

#### ML200 HISTOLOGY AND CYTOLOGY (2,4) 3 Cr.

A course in the essentials of preparation of mammalian and human tissues for microscopic examination including the fixing, embedding, sectioning and staining of these tissues. The theoretical and practical aspects of tissue and organ, identification are taught as well as cytological techniques. Automated tissue processing techniques and the preparation of frozen sections are integral parts of the course.

Prerequisites: SC105, SC137, CH107, CH110, or permission of chairman

#### ML210 HEMATOLOGY AND RENAL PHYSIOLOGY (2,3) 3 Cr.

The study of hemopoiesis, and the blood count as a diagnostic tool. The significance of abnormal findings. Study of the physiology of the kidney under normal and abnormal circumstances, through analysis of the urine. Recent sophisticated equipment and methods used in blood and urine analysis.

Prerequisites: SC137, CH107, SC105, or permission of the chairman

#### ML211 CLINICAL CHEMISTRY (3,3) 4 Cr.

The chemical analysis of blood, urine, and cerebrospinal fluid. Role of chemical tests in medical diagnosis. Significance of changes in fluid and electrolyte balance. Blood gas specialized equipment, including auto-analyzer.

Prerequisites: CH107, CH110, SC105, or permission of chairman

#### ML214 DIAGNOSTIC BACTERIOLOGY (2,3) 3 Cr.

The study of general principles of bacteriology with emphasis on the isolation and differentiation of organisms encountered in the hospital laboratory. Sensitivity testing, serological typing methods, and sterility testing for pathogenic bacteria common to clinical syndromes are included.

#### ML215 SEROLOGY AND IMMUNOLOGY (2,3) 3 Cr.

The study of resistance to infectious diseases by the body's immune mechanisms. This includes consideration of the properties and behavior of foreign antigenic substances and antibodies formed in response.
cal diagnostic procedures in the laboratory emphasize understanding and interpreting the tests for Syphilis, Mononucleosis, Rheumatic Fever, Rheumatoid Factor, Pregnancy and others. An introduction to Blood Banking is included and involves blood typing and RH determination, crossmatching and Coombs test. Modern techniques and instrumentation such as the Auto Analyzer are employed.

Prerequisites: SC105, SC137, CH107, CH110, or permission of chairman

**ML243 PRACTICUM IN MEDICAL TECHNOLOGY**
(2,3) 3 Cr.

Students will spend five hours per week at local cooperating hospital laboratories under guidance of senior technician and/or laboratory director. Work to be appraised by person in charge of laboratory and department chairman. In lieu of this, students may do advanced work in specialized tests in the college laboratory.

Prerequisites: Open only to students who have completed ML210, 214, 215, or with permission of chairman

**ML244 CLINICAL SEMINAR** (0,2) 1 Cr.

Presentations by the faculty and guest lecturers on the latest developments and research progress in the clinical field followed by questions and discussions.
The primary objective of the Department of Mortuary Science is to offer academic training which will prepare the student to accept his obligation in the community as a professional person and a citizen.

The first of its type in New York State, this two-year degree program includes extensive work in the areas of biological science, business and accounting, as well as instruction within the major area of concentration. Upon completion of their two years of academic preparation, graduates are required by State law to complete a year of resident training in a New York State funeral establishment. This year of apprenticeship qualifies students to sit for the licensing examination.

For all field experiences, student dress must conform to field agency protocol.

**Typical Employment Opportunities**

Manager or Supervisor of a Funeral Home  
Licensed Funeral Director  
Assistant Funeral Director  
Funeral Director-Embalmer  
Embalmer  
Assistant Embalmer  
Apprentice

### MORTUARY SCIENCE

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS 101</td>
<td>History and Orientation of Funeral Principles and Practices</td>
<td>3 0 3</td>
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</tr>
<tr>
<td>EN 101</td>
<td>English Composition</td>
<td>3 0 3</td>
<td></td>
</tr>
<tr>
<td>SC 107</td>
<td>or SC 114 Biology</td>
<td>3 0 3</td>
<td></td>
</tr>
<tr>
<td>SO —</td>
<td>Social Science Elective</td>
<td>3 0 3</td>
<td></td>
</tr>
<tr>
<td>CH 106</td>
<td>Biochemistry</td>
<td>3 2 4</td>
<td></td>
</tr>
<tr>
<td>PE —</td>
<td>Physical Education</td>
<td>0 2 1</td>
<td></td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15 4 17</strong></td>
<td></td>
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</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS 102</td>
<td>Public Health &amp; Sanitary Science</td>
<td>3 0 3</td>
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</tr>
<tr>
<td>SC 104</td>
<td>Microbiology</td>
<td>2 2 3</td>
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<td>EN 101</td>
<td>Introduction to Literature</td>
<td>3 0 3</td>
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<tr>
<td>SC 105</td>
<td>Anatomy and Physiology</td>
<td>3 2 4</td>
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<tr>
<td>SO 222</td>
<td>Sociology</td>
<td>3 0 3</td>
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<td>PE —</td>
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<td></td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>14 6 17</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

#### Mortuary Science

**MS101 HISTORY AND ORIENTATION ON FUNERAL PRINCIPLES AND PRACTICES (3,0) 3 Cr.**

The survey and study of funeral practices from the year 4000 B.C., Egypt, to the present in America.

**MS102 PUBLIC HEALTH & SANITATION (3,0) 3 Cr.**

A survey of Public Health problems, organisms causing infectious diseases, agencies, etc.

**MS202 ANATOMY FOR EMBALMERS (2,2) 3 Cr.**

A course for the Mortuary Science student involving a detailed study of the vascular system, muscular system and skeletal system.

**MS203 EMBALMING THEORY AND PRACTICE (3,4) 4 Cr.**

Lectures and clinical experience dealing with the basic principles, techniques and treatment of cases.

**MS204 RESTORATIVE ART (2,2) 3 Cr.**

A practical course in the repair of dead humans damaged by traumatic lesions.

**MS205 MORTUARY LAW (3,0) 3 Cr.**

A study of mortuary jurisprudence and business law. Application to professional and business aspects of funeral home operation.

**MS206 MORTUARY MANAGEMENT (3,6) 5 Cr.**

A study of management techniques and procedures for funeral chapels.

**MS207 CLINICAL PRACTICES (3,2) 4 Cr.**

Practical embalming experience in a preparation room, or in cooperating funeral homes under supervision of licensed teachers.

**MS208 HISTOLOGY AND PATHOLOGY (2,2) 3 Cr.**

Pathological changes as related to disease processes and the affects of physical and chemical trauma on the human body are discussed. Post-mortum visual materials are used to illustrate these processes.
NURSERY EDUCATION

PROFESSOR PAUL S. RILEY, Chairman

The curriculum in Nursery Education is designed to provide post-high school training for students in preparation for careers in day nurseries and private nursery schools. The curriculum in Nursery Education would qualify the graduate for work with young children under private and public auspices.

For all field experiences, student dress must conform with field agency protocol.

Typical Employment Opportunities

Assistant Teacher Pre-Kindergarten Programs
Assistant Teacher Day Care Center
Assistant Teacher in Nursery School
Assistant Teacher for the Physically Handicapped
Attendant in a School for the Mentally Retarded
Counselor in Children's Home
Summer Camp Counselor

The following list of courses is a model program. The sequence in which students complete these courses will be determined in consultation with the Chairman of the Nursery Education Department. It is the students' responsibility to insure that all courses are completed before graduation.

Nursery Education

PROGRAM REQUIREMENTS

GROUP I General Education Area—38 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>English (EN 100, EN 114)</td>
<td>6</td>
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<tr>
<td>Psychology (SO 219, SO 220, SO 232)</td>
<td>9</td>
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<tr>
<td>Sociology (SO 222, SO 223, SO 239)</td>
<td>6</td>
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<tr>
<td>Minority in American Society (SO 239)</td>
<td>3</td>
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<tr>
<td>or Black History (SO 243)</td>
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<tr>
<td>or History of Puerto Rico (SO 248)</td>
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</tr>
<tr>
<td>Natural Science (SC 119 or SC 107)</td>
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<tr>
<td>Nutrition (FT 107)</td>
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<tr>
<td>Physical Science (PH 112)</td>
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<tr>
<td>Health Education (NU 210)</td>
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<tr>
<td>Physical Education</td>
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</table>
**GROUP II** Nursery Education Area—24 Credits
- **ED 100** Introduction to Nursery Education 3
- **ED 101** Creative Activities I 2
- **ED 102** Creative Activities II 2
- **ED 115** Children's Education 3
- **ED 200** Children's Literature 3
- **ED 207** Field Experiences in Early Childhood 8
- ***ED 215** Workshop in Early Childhood 3
- ***ED 216** Education of Young Children from Minority Groups 3 3
- ***ED 217** Education of Exceptional Children 3
- *** Elective

**GROUP III—3 Credits**
Courses selected by student from any other curriculum chosen by the student with advisement to complete a minimum of 65 credits.

**Total: 65**

### NURSERY EDUCATION

**SEQUENCE OF COURSES**

**First Semester**

<table>
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<tr>
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<tbody>
<tr>
<td>ED 100</td>
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<td>ED 101</td>
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<td>SO 219</td>
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<td>SO 222</td>
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<tr>
<td>EN 100</td>
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15 Cr.

**Second Semester**

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<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
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<tr>
<td>SC 119</td>
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<td>SO 220</td>
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<td>ED 102</td>
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<td>ED 115</td>
<td>EN 114</td>
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<td>ED 120</td>
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15 Cr. 16 Cr.
Third Semester

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<td>ED 200</td>
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<td>SO 232</td>
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Third Semester

<table>
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<td>ED 120</td>
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<td>NU 210</td>
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<td>SO 232</td>
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Fourth Semester

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<td>SO -</td>
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<tr>
<td>PH 112</td>
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<tr>
<td>SO 223</td>
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<tr>
<td>Elective+</td>
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<tr>
<td>EN 114</td>
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</table>

* Students must elect either SO 239, or SO 243, or SO 248.
+ Students may elect ED 216, or ED 217, or SO -.

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Nursery Education

ED100 INTRODUCTION TO NURSERY EDUCATION (3,0) 3 Cr.
An overview of Nursery Education—the history, philosophy, and role of nursery education in the overall educational scheme. Private schools, cooperative nurseries, day care centers, and other agencies will be covered in the course. Visits to nursery schools by the student are required.

ED101 CREATIVE ACTIVITIES I (1,2) 2 Cr.
Developing techniques in the creative teaching of young children. Methods and approaches utilizing the equipment and media appropriate to each curriculum area. Special emphasis placed on music, wood working, language arts, science, block building, dramatic play, and outdoor experiences.

ED102 CREATIVE ACTIVITIES II (1,2) 2 Cr.
Developing artistic and perceptual awareness for teachers of young children with various art media. Paints, collage, paper mache and other materials will all be explored for use in early childhood education.

ED115 CHILDHOOD EDUCATION (3,0) 3 Cr.
An introduction to the areas of curricula for young children with emphasis on individualization of instruction as well as an evaluation of the new approaches to the teaching of reading, mathematics, science and social studies. The focus remains in the area of early childhood education.

ED120 OBSERVATION AND PARTICIPATION WITH CHILDREN (1,4) 3 Cr.
Students will spend their time in actual educational settings observing and recording the behavior of children. They will be exposed to a variety of schools, day care
centers and institutions in order to ascertain which setting will be the field for major study.

**ED200 CHILDREN'S LITERATURE (3,0) 3 Cr.**

A detailed study of appropriate literature for pre-kindergarten children; development of a working knowledge of authors, illustrators, and publishers of children's books with emphasis on language, format, and subject matter. Attention to the selection and use of poetry plus development of storytelling skills.

**ED207 FIELD EXPERIENCE (2,12) 8 Cr.**

Participation in educational programs for young children. The student will take increasing responsibility in the role of the assistant teacher.

Prerequisite: ED120

**ED215 WORKSHOP IN EARLY CHILDHOOD**

Each student will have the opportunity to explore in depth an independent project relating to the profession. Permission of the Chairman of the Department.

**ED216 EDUCATION OF YOUNG CHILDREN FROM MINORITY GROUPS (3,0) 3 Cr.**

The education of disadvantaged young children from black, Puerto Rican and other minority groups with consideration for the historical, cultural and educational backgrounds of each. Special attention is given to the psychological-sociological roots of prejudice.

**ED217 EDUCATION OF EXCEPTIONAL CHILDREN (3,0) 3 Cr.**

The background and characteristics of children with learning disabilities in the light of recent approaches to the teaching of these children in school settings and institutions. Stress is put on recent approaches to the teaching of these children and the role of the teaching assistant.
NURSING

Professor Barbara H. Steinbaum, Chairman

The preparation of a technical nurse is the major objective of the Nursing program. This may be achieved within two academic years. Upon graduation, students receive the Associate in Applied Science degree and are eligible to take the New York State licensing examination for registered nurses.

The curriculum offers a balance of general education courses and specialized courses in nursing. Combined, these courses meet the graduation requirements and ready the student for his role as a nurse and as a citizen in today's society.

The technical or specialized aspect of the program is planned to provide each student with active participation in giving nursing care to individuals from infancy to old age. These learning experiences are obtained in various hospitals. To further enrich the student's experiences, observation periods are made available in community health and welfare agencies, physicians' offices, and by field trips.

Each student is assisted in the development of his fullest potential through guidance given by teachers who possess broad nursing experience and academic preparation in their fields.

The Department of Nursing is accredited by the National League for Nursing.

Men and women of any age, single or married, who meet the college entrance requirements are eligible for admission to the program.

Typical Employment Opportunities

First level nursing positions in hospitals and community agencies.

<table>
<thead>
<tr>
<th>NURSING</th>
<th>Hours</th>
<th>per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class</td>
<td>Lab.</td>
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<tr>
<td>First Semester</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>NU 101 Nursing-Fundamentals†</td>
<td>4</td>
<td>9</td>
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<tr>
<td>SC 105 Anatomy and Physiology*</td>
<td>3</td>
<td>2</td>
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<td>SO 220 General Psychology</td>
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<td>EN 100 English Composition</td>
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<td>1</td>
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<tr>
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<tr>
<td>Second Semester</td>
<td></td>
<td></td>
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<tr>
<td>NU 102 Nursing-Parental and Child-Health† *</td>
<td>3</td>
<td>9</td>
<td>6</td>
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<tr>
<td>CH 106 Introduction to Biochemistry*</td>
<td>3</td>
<td>3</td>
<td>4</td>
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<tr>
<td>SO 232 Developmental Psychology</td>
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<td>EN 101 Introduction to Literature</td>
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<table>
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<td>Medical Microbiology*</td>
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<td>SO 222</td>
<td>Sociology</td>
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<td>EN 114</td>
<td>Speech</td>
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### Fourth Semester

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<th>Lecture</th>
<th>Credits</th>
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<tbody>
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<tr>
<td>NU 204</td>
<td>Nursing in Modern Society</td>
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<tr>
<td>SO **</td>
<td>Social Science Elective**</td>
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<tr>
<td>Elective</td>
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<td><strong>Total</strong></td>
<td>13</td>
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</table>

**Total Credits Required: 69**

† Students are required to provide their own transportation to off-campus field experiences.

For all field experiences, student dress must conform with field agency protocol.

* A grade of “C” or better must be maintained in all clinical and clinically related courses; all prerequisites for these courses, as listed in the catalog, require a grade of “C” or better.

** Selected in consultation with major advisors.

### Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

#### Nursing

**NU101 NURSING—FUNDAMENTALS**  
(4,9) 7 Cr.

The study of nursing care common to all patients, and the scientific principles underlying that care. Opportunity to develop nursing skills and apply knowledge through guided learning experiences in the college laboratory and through the care of selected patients in the hospital environment, and community agencies.

Prerequisites: One unit of high school Algebra; two units of high school Biology and Chemistry.

**NU102 NURSING—PARENTAL AND CHILD HEALTH**  
(3,9) 6 Cr.

The study of the developmental tasks of the family life cycle including preparation for marriage, pregnancy, and childbirth. Although emphasis is on the role of the nurse in caring for the well mother, father, and newborn, consideration is given to deviations from the normal. The role of the nurse as a member of the health team is incorporated. Guided learning experiences are provided in hospitals, doctor’s offices, well baby clinics and other community agencies.

Prerequisites: NU101, SC105, Grade of “C” or better.

**NU201 NURSING—MENTAL AND PHYSICAL ILLNESS**  
(6,9) 9 Cr.

The study of major problems of children and adults with medical, surgical, and mental illnesses, with emphasis on the promotion and maintenance of maximum health. Consideration is given to preventive measures in the physical and psychological spheres. Guided learning experiences in nursing care are concurrently provided in the general and psychiatric hospitals, and other community agencies.

Prerequisites: NU102, CH106, Grade of “C” or better.
NU202 NURSING—MENTAL AND PHYSICAL ILLNESS (5,9) 8 Cr.
Further study of major health problems of children and adults. Specific areas of emphasis are neurological assimilation, excretion and transportation.
Prerequisites: NU201, SC110, Grade of “C” or better.

NU204 NURSING IN MODERN SOCIETY (2,0) 2 Cr.
An exploration of current major trends and issues in nursing. Some areas considered are: the organization and distribution of nursing and related services to meet changing health needs of people; differentiation of levels of nursing practice, and legal responsibilities inherent in nursing care. Problems of adjustment during transition from student to practitioner are discussed.
Prerequisites: NU101, NU102, NU201 with grade of “C” or better.

NU210 PERSONAL, FAMILY AND COMMUNITY HEALTH (3,0) 3 Cr.
An interdisciplinary study of factors in daily life which contribute to the promotion, conservation and maintenance of the health and well-being of individuals from childhood through senescence. Discussion of the major health problems in each stage of growth and development with emphasis on measures for recognition, prevention and rehabilitation. Consideration will be given to the effects of illness on the individual and the family. Community resources which aid in the promotion of these goals are surveyed.
Section I for Nursery Education majors. Section II for Recreation Supervision Majors. Not open to Nursing Majors except by permission of the instructor.
ORNAMENTAL HORTICULTURE

PROFESSOR JOHN W. HYDE, Chairman

The Department of Ornamental Horticulture offers courses for those who would be engaged in business or obtain employment in the field of ornamental horticulture. The program is based upon analysis of the job requirements of technicians in floriculture, landscape, nursery, turf and related horticultural enterprises.

Opportunities in the fields of ornamental horticulture are more numerous than ever. Each year, requests for technically prepared men and women have greatly exceeded the number of available graduates.

During the first semester the courses in ornamental horticulture are basic and preparatory for the specialization which follows and are the same for all students, providing them with the opportunity to apply principles to specific problems. Integrated with the subject matter courses are laboratory and field experiences. Specialization continues in the second year where further opportunity is afforded for improving competence and judgment.

ORNAMENTAL HORTICULTURE
(First Semester: the same for all Options)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Lab.</th>
<th>Weekly Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OH 101</td>
<td>3</td>
<td>2</td>
<td>11</td>
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<tr>
<td>OH 110</td>
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<td>MA 100</td>
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<tr>
<td>SC 102</td>
<td>3</td>
<td>2</td>
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<tr>
<td>EN 100</td>
<td>3</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>PE —</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

At the beginning of the second semester each student selects one of the following options: Floriculture, Landscape Development, Nursery Management, or Turfgrass Management. An option will be offered only when the number of students selecting it is sufficient.

Field trips will be required in a number of courses during the two years at an estimated cost to the student from $15 to $50.

As a financial aid there are a number of scholarships offered to students in Ornamental Horticulture. (Please see Financial Aid section of catalog.) Many of these scholarships become available during the third and fourth semesters and are based on scholarship and other criteria.
FLORICULTURE MERCHANDISING
FLORICULTURE PRODUCTION

The business of growing and selling flowers has been stimulated by the increase in our standard of living and the slogan, “Say it with Flowers” which the public has adopted as its own. Every community has its florist shop where flowers and plants are displayed and sold. Frequently these shops are attached to the greenhouses where flowers may be both grown and displayed. In cities, the florist maintains a shop which he stocks with plants and cut flowers to sell to customers for anniversaries, weddings, engagements, expressions of sympathy, and everyday living.

Skilled technicians are needed to operate commercial greenhouses ranges due to the use of complex and automated equipment, CO₂ and lighting systems, and various growth regulators and retardants used to produce economically top quality plants for the industry.

Typical Employment Opportunities

<table>
<thead>
<tr>
<th>Floral Designer</th>
<th>Retail Florist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flower Shop Manager</td>
<td>Wholesale Florist</td>
</tr>
<tr>
<td>Private Estate Flower Grower</td>
<td>Salesman or Sales Manager</td>
</tr>
<tr>
<td>Indoor Plant Designer</td>
<td>Commercial Grower</td>
</tr>
</tbody>
</table>

FLORICULTURE MERCHANDISING—FLORICULTURE PRODUCTION

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OH 102</strong> Floriculture</td>
<td>1 Class, 6 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>OH 103</strong> Herbaceous Plants I</td>
<td>1 Class, 2 Lab.</td>
<td>2</td>
</tr>
<tr>
<td><strong>OH 104</strong> Horticulture II</td>
<td>2 Class, 2 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>OH 107</strong> Woody Plants I</td>
<td>2 Class, 2 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>SC 108</strong> Entomology I</td>
<td>2 Class, 2 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>EN 101</strong> Introduction to Literature</td>
<td>3 Class, 0 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>PE</strong> Physical Education</td>
<td>0 Class, 2 Lab.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11 Class, 16 Lab.</td>
<td>18 Credit</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OH 202</strong> Flower Shop Management I</td>
<td>1 Class, 3 Lab.</td>
<td>2</td>
</tr>
<tr>
<td><strong>OH 203</strong> Greenhouse Management I</td>
<td>2 Class, 6 Lab.</td>
<td>4</td>
</tr>
<tr>
<td><strong>OH 204</strong> Herbaceous Plants II</td>
<td>1 Class, 3 Lab.</td>
<td>2</td>
</tr>
<tr>
<td><strong>OH 218</strong> Indoor Plants</td>
<td>2 Class, 2 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>SO</strong> Social Science*</td>
<td>3 Class, 0 Lab.</td>
<td>3</td>
</tr>
<tr>
<td><strong>Elective (General or Horticultural)</strong>*</td>
<td>1 Class, 3 Lab.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>10 Class, 17 Lab.</td>
<td>16 Credit</td>
</tr>
</tbody>
</table>
NURSERY MANAGEMENT

With increasing needs for landscape services due to an accelerated building program comes a corresponding stepped-up demand for plants. A person entering the field of ornamental horticulture, beside having a love for plants, must be able to propagate and grow to a commercial size, the many different species and varieties of woody plants which can be sold to the landscape man or home owner. The nursery, because of land values, is usually located in the lightly populated suburban or rural areas. Another type of nursery activity is the garden center where plants are held temporarily for sale to wholesale or retail customers. This option not only gives a general background in horticulture and the production of nursery stock, it also places emphasis on business management.

Typical Employment Opportunities

Nursery Manager
Plant Propagator
Garden Center Manager
Retail Nurseryman
Wholesale Nurseryman
Horticulturist

Designer Landscape Department
Arboretum Superintendent
Woody Plant Specialist
State Horticultural Inspector
Custom Spray Operator
Parkway Supervisor

NURSERY MANAGEMENT

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Class</th>
<th>per</th>
<th>Week</th>
<th>Lab.</th>
<th>Credit</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>OH 103</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
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<tr>
<td>OH 104</td>
<td>2</td>
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<td></td>
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<td>OH 106</td>
<td>1</td>
<td></td>
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<td>OH 107</td>
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<tr>
<td>SC 108</td>
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<td></td>
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<td>EN 101</td>
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Total Credits Required: 65
LANDSCAPE DEVELOPMENT

The construction of private and public buildings during the past few years has hit new highs. One result of this activity has been an increased need for the services of the landscape man. Despite the many good publications available on the subject of landscaping, home owners seek the advice of trained horticulturists when contemplating a complex or partial landscape job. A trained landscape man is prepared to build and maintain lawns; plant and cultivate trees, shrubs, flowers, and other plants; and design and construct landscape features, including walks, paths, small pools, and walls. Likewise pruning, spraying, feeding, and other kinds of tree work require the services of the competent landscape man.

Typical Employment Opportunities

<table>
<thead>
<tr>
<th>Landscape Designer</th>
<th>Garden Center Manager</th>
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<tbody>
<tr>
<td>Landscape Consultant</td>
<td>Arborist</td>
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<tr>
<td>Landscape Contracter</td>
<td>Landscape Inspector</td>
</tr>
<tr>
<td>Landscape Construction Foreman</td>
<td>Landscape Nurseryman</td>
</tr>
<tr>
<td>Landscape Planting Foreman</td>
<td>Landscape Maintenance Business</td>
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<tr>
<td>Landscape Technician</td>
<td>Park Superintendent</td>
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LANDSCAPE DEVELOPMENT

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>OH 103</td>
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<td>OH 105</td>
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<td>EN 101</td>
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<td>PE —</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>16</strong></td>
</tr>
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</table>
TURFGRASS MANAGEMENT

With the increased emphasis being placed upon turf by municipalities, state, and federal agencies as they construct new highways, parkways, parks, and recreation areas throughout the country, the scarcity of competent turf specialists is becoming acute. The Turfgrass Management option prepares students for such positions as golf course construction and maintenance foreman, golf course superintendent, cemetery, park, and grounds supervisors. Areas of instruction in addition to the basic horticultural courses include turf maintenance as a business, turfgrass problems, horticultural and turf equipment, landscape plans, landscape construction and topographical mapping.

Typical Employment Opportunities

Superintendent Golf Course
Turf Maintenance Business
Turf Supply Salesman
General Turf Construction Contractor
Golf Course Construction Contractor
Turf Research Technician
Commercial Sod Grower
Cemetery Superintendent
Golf Course Construction Foreman
Park Manager
Turf Consultant
Salesman Turf Products

TURFGRASS MANAGEMENT

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Hours Class</th>
<th>per Week</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>OH 104 Horticulture II</td>
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<td>3</td>
</tr>
<tr>
<td>OH 107 Woody Plants I</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>OH 108 Turfgrass Culture</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>OH 109 Turfgrass Management I</td>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>SC 108 Entomology I</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>EN 101 Introduction to Literature</td>
<td>3</td>
<td>0</td>
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### Third Semester

<table>
<thead>
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<th>Title</th>
<th>Class</th>
<th>Lab.</th>
<th>Hours</th>
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<tr>
<td>OH 209</td>
<td>Planting Plans I</td>
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<td>6</td>
<td>3</td>
</tr>
<tr>
<td>OH 214</td>
<td>Horticultural and Turfgrass Equipment</td>
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<td>2</td>
<td>3</td>
</tr>
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<td>OH 230</td>
<td>Turfgrass Management II</td>
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<td>SO —</td>
<td>Social Science</td>
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<tr>
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**Total Credits Required:** 17

### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Class</th>
<th>Lab.</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>OH 219</td>
<td>Landscape Construction</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>OH 236</td>
<td>Drainage and Irrigation</td>
<td>2</td>
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**Total Credits Required:** 15

**Total Credits Required:** 66

### HORTICULTURE ELECTIVES

#### * Electives—Third Semester

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DIPLOMA PROGRAM IN
ORNAMENTAL HORTICULTURE
*Program not offered in September 1971

The purpose of the Ornamental Horticulture Vocational Program is to provide a one-year (two semesters) post-high school series of courses to meet the rapidly increasing demand for technically-oriented specialists in the ornamental horticulture field. Contractors, nurserymen, florists, park departments, school districts, golf courses and suppliers of horticulture equipment, chemicals and supplies have long experienced the lack of qualified personnel in these areas of the ornamental horticulture field. The increased emphasis on the use of equipment, chemicals, and other modernized techniques has made it necessary for today's work forces to be more knowledgeable and skilled within the various ornamental horticulture specialties.

High school graduates, or the equivalent, of good character and in good physical condition, may apply. They must also have the aptitude and academic qualifications for the type of work for which this project is designed.

The program would provide an area of study and occupational preparations for students not interested in pursuing a two-year Associate Degree program, yet desirous of post-high school education.

Typical Employment Opportunities

Landscape Construction
Landscape Gardening
Turfgrass Maintenance
Operation and minor repair of horticultural and turfgrass equipment

Plant Propagation
Nursery Maintenance
Flower Shop Maintenance
Greenhouse Maintenance

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FACILITIES

Extensive horticultural facilities, in addition to classrooms and conventional laboratories, reinforce the educational program of the College.

The horticultural complex enables a wide variety of practical experience with materials and methods especially appropriate for technicians.

Included are 20,000 square feet of glass in the conservatory and various greenhouses devoted to specialized crops; several acres of land devoted to a woody plant nursery with shade houses and portable greenhouses; an acre of turf demonstration plots; three golf greens; three acres of formal and informal gardens together with 10 acres of arboretums containing collections of shrubs and trees, and 50 acres of landscaped college buildings situated on a cultivated campus featuring a selected variety of plants, thus completing a living laboratory.

The department takes advantage of the fine arboretums, golf courses, parks and landscaped estates found on Long Island. These facilities provide the Farmingdale student with one of the most unique horticultural backgrounds that can be found in the United States.

Areas are provided for the breeding and testing of plants in cooperation with individuals and private organizations engaged in research. These include official test plots of the All-American Selections, flower seed trials, and a demonstration rose garden.

Ornamentals Research Laboratory

This facility conducts research on problems of Long Island nurserymen and flower growers. It is a cooperative project of the New York State College of Agriculture at Cornell University, the United States Department of Agriculture at Beltsville, Maryland, and the College.
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Ornamental Horticulture

OH101 SOIL SCIENCE (2,2) 3 Cr.
The study of soil texture, structure, organic matter, and plant nutrients as related to the use of lime, fertilizers, manures, and peats to raise horticultural soils to high levels of production.

OH102 FLORICULTURE (1,6) 3 Cr.
Every student is given the opportunity to explore, initiate, and develop cultural proceedings as related to the growing of plants under glass and outdoors. Through participation, students will have the opportunity to acquire knowledge, skills, and judgment. The elements and principles of art for creative design with application in lettering, freehand, and perspective drawing.

OH103 HERBACEOUS PLANTS I (1,2) 2 Cr.
Classification, identification, and general culture of perennials, bulbs, and roses commonly used in garden planning.

OH104 HORTICULTURE II (2,2) 3 Cr.
In this course the student is made aware of the plants’ total environment and the forces affecting the plants’ growth responses. Specific details are developed to introduce the theories behind plant propagation, and the plant growth and control.

OH105 LANDSCAPE GARDENING (1,6) 3 Cr.
Classroom studies in landscape appreciation. The elements and principles of art for creative design with application in lettering, freehand, and perspective drawing. Field application in garden improvement and operation.

OH106 NURSERY MANAGEMENT (1,6) 3 Cr.
An introductory nursery course in the techniques and practices used in the commercial production of herbaceous perennials, ground covers, deciduous shrubs and trees, conifers, and broadleaved evergreens. Greenhouse and nursery procedures and practices. The elements and principles of art for creative design with application in lettering, freehand, and perspective drawing.

OH107 WOODY PLANTS I (2,2) 3 Cr.
The Woody Plants courses give a picture primarily of the woody plants grown in nurseries for landscape purposes, and secondly of those found in arboreta, woodlands, and fields of Northeastern United States. Emphasis is on identification, culture, uses, flowers, and fruits, and ecological relationships. Several of the evergreens, broad and narrowleaf, as well as some of the deciduous trees and shrubs will be covered in this first study.

OH108 TURFGRASS CULTURE (2,2) 3 Cr.
Soil requirements of fine turf, turf propagation, seed and vegetative identification, turf usage. Pest identification, prevention, and control are discussed in detail.

OH109 TURFGRASS MANAGEMENT I (1,6) 3 Cr.
Laboratory sessions in constructing and maintaining specialized turf areas.

OH110 HORTICULTURE I (1,3) 2 Cr.
Instruction, orientation, and field experience in the various phases of horticulture. Each week the explanation and demonstration of a new subject precede the assignment to duties. A rounded experience is the objective. Tools, techniques, and standards of workmanship are taught.

OH112 ECOLOGY (2,3) 3 Cr.
The study of the relationships of organisms to their environment and to each other. Field studies are included.

OH201 ARBORICULTURE I (1,3) 2 Cr.
Theory and practice of care of shade and ornamental trees. Techniques of climbing, pruning, bracing, cabling, fertilization, bark repair, and cavity repair.

OH202 FLOWER SHOP MANAGEMENT I (1,3) 2 Cr.
Instruction and application of principles in the art of floral design as to form, styles, and composition. Designing of floral arrangements, wreaths, sprays, baskets, bouquets, wedding flowers, and corsages are included in the laboratory.
OH203 GREENHOUSE MANAGEMENT I  
(2,6)  4 Cr.  
A study of locations most favorable for the production of cut flowers and pot plants. Wholesale and retail flower establishments are also studied.

OH204 HERBACEOUS PLANTS II  
(1,3)  2 Cr.  
Continuation of Herbaceous Plants I: annual and biennial flowers, and fall flowering perennials. Landscape uses of herbaceous plants and design of flower borders.

OH206 HORTICULTURAL MANAGEMENT AND OPERATIONS  
(3,0)  3 Cr.  
Office management procedures, as they pertain to the basic requirements of contracts, specifications and professional ethics within ornamental horticulture and landscape development, are discussed. A study is made of the relationships between client and contractor, client and designer, and designer and contractor. Cost, fee determination and procedures are discussed.

OH207 LANDSCAPE PLANS I  
(1,6)  3 Cr.  
The theory and principles of landscape design applied to selected landscape problems. Preliminary sketches and final presentations in plan, elevation, and perspective form. Grading, construction, planting, and staking plans; basic details of architectural construction.

OH208 NURSERY PRODUCTION  
(3,3)  4 Cr.  
Commercial nursery stock production dealing with plant growth patterns and plant responses in relation to soils, water, fertility, planting techniques and distances, top and root pruning. Plant production cycles, rotations, and treatment for economy production.

Emphasis will be placed on the commercial propagation of woody plants by sexual and asexual means.

OH209 PLANTING PLANS I  
(1,6)  3 Cr.  
On-the-job sketching and plan presentation as done by nurseries; planning of small home grounds, utilizing the drafting room and its equipment.

OH210 PLANT PROPAGATION  
(2,3)  3 Cr.  
This course is designed for the nursery student in order that he may recognize and explore the many and various techniques and facilities used in the propagation of plants as grown by commercial nurserymen. Exacting technicalities are examined and practical applications applied in the production of ornamental plants by both sexual and asexual means.

OH212 WOODY PLANTS II  
(2,2)  3 Cr.  
A continuation of Woody Plants I covering additional evergreens, broad and narrowleaf, as well as deciduous plants—trees, shrubs, vines, and ground covers.

OH213 ARBORICULTURE II  
(1,3)  2 Cr.  
Advanced theory, practice, and field studies of arboriculture industry, including care and pruning of fruit plants, diagnosis of tree ills, shade tree evaluation, power equipment, business practices and organization including management, record keeping, estimating, customer relations, ethics, and standards. Prefaced by an overview of the arborist industry.

OH214 HORTICULTURAL AND TURFGRASS EQUIPMENT  
(2,2)  3 Cr.  
A study in the selection, field operation and maintenance of motive power used in the various phases of turf management and horticulture enterprises.

OH215 FLOWER SHOP MANAGEMENT III  
(1,6)  3 Cr.  
Locating, managing, and operating a flower shop. The designing of pieces for special occasions. The art of making corsages and arranging flowers for the home, church, hotel, and ballroom. Advertising, buying and selling, and all factors relative to location and equipment.

OH216 GREENHOUSE MANAGEMENT II  
(2,6)  4 Cr.  
The study of florist crops, modern technical applications, and cultural requirements as used in the production of cut flowers and pot plants in commercial greenhouses.

OH218 INDOOR PLANTS  
(2,2)  3 Cr.  
A study of various plants that are suitable for indoor culture. Emphasis will be placed on identification, propagation, cultural requirements, ecological and aesthetic values.
OH219 LANDSCAPE CONSTRUCTION  
(2,3) 3 Cr.
Details of steps, walks, seats, walls, fences, and other landscape features and structures. Selection and use of materials used in the construction of these features.

OH220 LANDSCAPE PLANS II  (1,9) 4 Cr.
A continuation of Landscape Plans I with progressively more difficult problems.

OH221 LANDSCAPE SURVEYING  (2,3) 3 Cr.
The theory of plane surveying applied to landscape design and combination. The use of various levels and instruments to measure distance and plot land areas and elevations.

OH222 NURSERY MANAGEMENT II  (2,3)
A continuation of the study of commercial plant production dealing with programming plant production and nursery land use, as related to nursery layout in sections and blocks. Special facilities and structures are oriented into the production programs for economic production. Cost finding techniques, price fixing, and profits are studied and equated.

OH225 WOODY PLANTS III  (1,3) 2 Cr.
Advanced study of the plants previously considered, especially of named varieties or cultivars, and of the lesser-known trees, shrubs, vines, and ground covers. An understanding of plant peculiarities and requirements, and the ability to evaluate them for landscape purposes are important objectives.
Prerequisites: OH107, OH212

OH230 TURFGRASS MANAGEMENT II  
(2,3) 3 Cr.
Business procedures confronting professional turf growers including cost accounting, time study, record keeping, evaluation of equipment and materials.

OH236 DRAINAGE AND IRRIGATION  
(2,3) 3 Cr.
The efficiencies of various drainage and irrigation concepts are discussed as they pertain to terrain, soils, climate, and plants being grown. Water sources, availability and storage are taught along with pressure requirements and means of conveyance. When to irrigate, how to irrigate and rates of application are discussed as they relate to soils and terrain.

OH240 HORTICULTURAL MERCHANDISING  
(2,3) 3 Cr.
Horticultural merchandising techniques will be studied. Emphasis is on cost analysis, purchasing, pricing, sales promotion, material display techniques, credit management and determination of profit.

HR100 HORTICULTURAL SOILS  (1,3) 2 Cr.
A study of soil texture, drainage, tillage, fertility and the use of fertilizer, lime and other materials used to produce high quality plant material. Each student will be actively engaged in all practical soil testing techniques useful in good plant production.

HR101 INTRODUCTION TO HORTICULTURE  
(2,4) 3 Cr.
Instruction, orientation and field experience in the various phases of horticulture; tools, techniques and standards of workmanship are taught.

HR102 HORTICULTURE EQUIPMENT  (2,3) 3 Cr.
Theory of small power units. Engines of all types—2-stroke, 4-stroke, air-cooled, liquid-cooled, mobile and stationary. Principles of equipment and machinery operation, maintenance, selection and minor repair are covered.

HR103 HORTICULTURAL APPLICATIONS  
(1,6) 3 Cr.
A study in techniques and practices used in commercial landscape operations. Planting, maintenance of industrial and home grounds will be covered. The first portion of the course will be devoted to the elements and principles of art for creative design, with application in lettering, freehand drawing and basic design.
HR104 GARDEN CONSTRUCTION (2,3) 3 Cr.
Selection and the use of materials used in the construction of landscape features and structures. Details will be studied for construction of patios, steps, walks, walls, decks, fences, pools and outdoor lighting.

HR105 WOODY PLANT MATERIALS (2,3) 3 Cr.
A study of evergreen and deciduous shrubs, trees, vines and ground covers used in landscape work, with special reference to their distinguishing characters and culture.

HR106 ANNUAL & PERENNIAL PLANTS (1,3) 2 Cr.
A study of herbaceous plant materials used in landscape planting; classification, identification and cultural requirements. Bulbs, roses, annuals and perennials will be covered.
PHOTOGRAPHIC TECHNOLOGY

Professor R. C. Bowman, Chairman

The Photographic Technology curriculum opens a completely new and unique career opportunity for persons with a deep interest in the technical aspects of photography.

Technical advances in the field of photography have made it one of the nation's largest and fastest growing industries. Photography has proven itself as a necessary and invaluable tool in every field. It performs vital functions in industry, business, medicine, space, education, communications; it is essential to the military, the professions, and the sciences, as well as a hobby enjoyed by millions. To meet these widely diversified photographic applications, a considerable amount of specialized and complex equipment has been designed.

This curriculum has been established to help provide technically qualified personnel not only to install, maintain, modify, and service these increasingly important photographic devices, but to test and evaluate the materials and processes with which they are associated.

The course of study prepares the technician with both a theoretical and practical background in physics, mathematics, photomechanisms, photochemistry, electricity, electronics, color photography, and the photographic process. Students interested in more advanced degrees will find opportunities for transfer in Photographic Science, Photographic Illustration and Photographic Instrumentation.

**Typical Employment Opportunities**

Manager, Photo Process Plant
Repair Department Supervisor
Technical Assistant
Quality Control Technician
Photo Equipment Service Technician
Technical Representative
Motion-analysis Photographer
Photoelectronics Technician
Graphic Arts Cameraman
Photo Interpretation Technician

Camera Store Manager
Custom Equipment Designer
Color Process Supervisor
Industrial Photographer
Audio-Visual Equipment Specialist
Research Assistant
Photofinishing Production Manager
Production Sensitometrist
Photographic Technician
Photo-Technical Correspondent
## PHOTOGRAPHIC TECHNOLOGY

### First Semester

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### Total Credits Required: 71

***Mathematics and Physics Options:

This program has been designed as a vocationally oriented "terminal type" and requires MA 120, MA 121, PH 101 and PH 102 to qualify for the Associate Degree. Students with the capacity and interest in seeking transfer into baccalaureate programs however, should select the Mathematics series MA 124 and MA 125, and the Physics series PH 131 and PH 132.
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Photographic Technology

PT101 PHOTOGRAPHIC PROCESSES
(3,4) 4 Cr.
An introduction to the basic concepts underlying the science of photography. The laws of physics and chemistry applied to problems associated with the perpetuation of the optical image. Introduction to sensitometry and densitometry.

PT102 PHOTOGRAPHIC PROCESSES
(3,4) 4 Cr.
Expansion of the fundamentals of photographic science introduced in PT101. The theory and interrelated practices associated with the devices, materials, and processes of black and white photography and graphic reproduction. Prerequisite: PT101

PT201 PHOTOGRAPHIC MECHANISM I
(1,3) 2 Cr.
Still camera mechanisms. Nomenclature, design, theory, and function of camera components. Industrial standards of operation are stressed.

PT202 PHOTOGRAPHIC PROCESSES III
(3,6) 5 Cr.
The theoretical principles and practical aspects of color and color photography. The function of light in color, image formation, color correction, colorimetry, and dye image structure associated principally with contemporary color processes. Prerequisite: PT102

PT204 PHOTOGRAPHIC ELECTRONICS
(2,3) 3 Cr.
Study of the design and operating principles of electronic circuitry directly related to the automation of photographic devices. Development and use of the two-line diagram in circuit analysis and trouble shooting. Power supplies and special circuitry associated with timing mechanisms, synchronizing mechanisms and specialized light sources of the pulsed xenon and other high-intensity short-duration types.

PT205 PHOTOGRAPHIC MECHANISMS II
(1,3) 2 Cr.
The mechanisms and related equipment employed in the fields of 8 mm. and 16 mm. motion picture. Nomenclature, function, and design requirements of component parts. Unit layout efficiency and problems in kinetics. Experience with modern motion picture cameras and projectors. Prerequisite: PT201

PT206 PHOTOGRAPHIC PROCESSES IV
(3,4) 4 Cr.
Devices, processes, and materials associated with the high-speed and mass production field of photography where automation plays a vital role. An interrelated application of the theories and practices studied in physics, electronics, chemistry, and photographic mechanisms, and in the previous courses in Photographic Processes. Prerequisite: PT202

PT220 BIOLOGICAL PHOTOGRAPHY
(2,4) 3 Cr.
An introductory course in the basic concepts underlying the science of photography. Photo-chemical theory, photo-optics, and sensitometry are basic to the allied aspects of this course. Assignments and laboratory experimentation include studies of photographic materials, photographic processes, general photography, lighting, composition, elements of motion picture photography, photocopying and office duplicating systems, and photomicrographic principles. Prerequisite: Successful completion of one year of Biological Technology curriculum or its equivalent.

PT221 BIOLOGICAL PHOTOGRAPHY
(2,4) 3 Cr.
An expansion of the photographic fundamentals introduced in PT220, with considerable emphasis on color. Preparation and presentation of visual communication materials, gross specimen photography, photomicrography, slide production and duplication, X-ray duplication and reduction.
Use of ultra-violet, infra-red and other special illumination problems. Special clinical and field problems will be assigned on the basis of the individual area interests of the students.

Prerequisite: PT220
PHYSICAL EDUCATION

PROFESSOR THOMAS WATT, Chairman

Physical Education is designed to help students lead more effective and satisfying lives. Instruction in Physical Education offers students an opportunity to learn the skills of such lifetime sports as Badminton, Bowling, Golf and Tennis. These sports can be played and enjoyed throughout life.

One year of Physical Education is required of all students who are medically fit. Exemption from this requirement may be granted any student who has a medical impairment or advanced credit from another institution. Students who are medically excused from Physical Education for conditions that are of a short term or temporary nature, must complete the Physical Education Requirement in order to graduate. The College accepts the recommendation of the American Council on Education that veterans with at least six months service be excused from those physical education courses required of all students. A regulation uniform is required of all students taking Physical Education.

In addition to Physical Education Courses, the college provides an extensive Athletic Program of Intercollegiate and Intramural Sports and Games for both men and women. The men's Intercollegiate Athletic Program includes Baseball, Basketball, Bowling, Cross Country, Golf, Gymnastics, Indoor Track, Lacrosse, Soccer, Tennis, Track and Field, and Wrestling. Intercollegiate Athletics for women includes Badminton, Bowling, Basketball, Field Hockey, Softball, Tennis, and Volleyball. All men and women coaches are full-time members of the Physical Education Faculty.

The purpose of the Intramural Sports Program is to provide each medically qualified student at Farmingdale the opportunity to participate in an activity of his or her choice, as far as available facilities will permit. The program is organized for both individual and team competition. Intramural sports are a supplement to the general physical education program. Intramural participation is invited in Badminton, Basketball, Tennis, Golf, Softball, Bowling, Flag Football, Horseshoe Pitching, Track and Field and Volleyball. Intramural Athletic Activities for women include Badminton, Bowling, Tennis and Volleyball.

Course Descriptions

Physical Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tr>
<td>PE101</td>
<td>ARCHEDY—BOWLING*</td>
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<td></td>
<td>2 hrs. per wk. 1 Cr.</td>
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In this course the emphasis is on the two lifetime sports of Archery and Bowling. The student is given the history, basic rules, and the skills for these sports. Students must obtain regulation gym uniforms and sneakers during the first week of classes.

* Students who elect bowling must pay $4.20 for use of the alleys. Bowling shoes are supplied free.

PE103 BADMINTON—BOWLING* 16 wks. 2 hrs. per wk. 1 Cr.

In this course the emphasis is on the sports of Badminton and Bowling. The student is given the history, basic rules, and the skills for these sports. Students must obtain regulation gym uniform and sneakers during the first week of classes.
PE102 TENNIS—VOLLEYBALL 16 wks.
2 hrs. per wk.  1 Cr.
Instruction is given in Tennis and Volleyball. The student is given the history, basic rules, and the skills for these sports. Students must obtain regulation gym uniform and sneakers during the first week of classes.

PE105 ARCHERY—BADMINTON 16 wks.
2 hrs. per wk.  1 Cr.
Instruction is offered in the activities of Archery and Badminton. The student is given the history, basic rules, and the skills for these sports. A regulation gym uniform and a pair of sneakers are required.

PE106 TENNIS—GOLF 16 wks.
2 hrs. per wk.  1 Cr.
This course offers instruction in the lifetime sports of Tennis and Golf. The student is given the history, basic rules, and the skills for these sports. A regulation gym uniform and a pair of sneakers are required.

PT107 SELF DEFENSE—TABLE TENNIS
(MEN)
PE107 SLIMNASTICS—TABLE TENNIS (WOMEN)
16 wks. 2 hrs. per wk.  1 Cr.
This course will be offered to men as Self Defense and Table Tennis. It will be offered to women as Slimnastics and Table Tennis. The student is given the history, basic rules, and the skills for these sports. A regulation gym uniform and a pair of sneakers are required.

PE104 GOLF—VOLLEYBALL 16 wks.
2 hrs. per wk.  1 Cr.
This course offers instruction in the sports of Golf and Volleyball. The student is given the history, basic rules, and the skills for these sports. A regulation gym uniform and sneakers are required.

PE213 GOLF—3rd Semester 8 weeks
4 hrs. per week  1 Cr.
For Recreation Supervision Majors only. A comprehensive course for Recreation Supervision Majors including fundamentals of golf, stance, swing, rules and etiquette. Emphasis given to mechanics of swing and effective methods of teaching golf. Practice will be with long irons, short irons, and woods. A regulation uniform and sneakers are required.

PE214 TENNIS—4th Semester 8 weeks
4 hrs. per week  1 Cr.
For Recreation Supervision Majors only. An in-depth presentation of the game of tennis. Provides instruction in basic skills and match play. A knowledge of rules and court etiquette are also required. Emphasis will be placed on advanced skills and techniques involved in the game of tennis. A regulation gym uniform and sneakers are required.
### Second Semester

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<thead>
<tr>
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<th>Class</th>
<th>Lab</th>
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<td>3</td>
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<td>EN 101</td>
<td>Introduction to Literature</td>
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<tr>
<td>SO</td>
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### Total Credits: 65+  
* Prior Consultation with Police Science Faculty required.  
** Choice from HU - EN - LA - SC - MA - PS - CA - SO - in consultation with Police Science Faculty, and depending on availability of courses.  
+ SO 239, or SO 243, or SO 248.

### CORRECTIONAL ADMINISTRATION

#### First Semester

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<td>PS 214</td>
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<td>PS 110</td>
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#### Total Credits: 15  
15 4-5 16-17
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Police Science—
Correctional Administration

PS103 HISTORY OF AMERICAN LAW AND JUSTICE (3,0) 3 Cr.
Philosophical and historical background of policing throughout the free world; special emphasis is placed on the heritage of British and American policing; the governmental role of law enforcement in society; administration of American criminal justice at all levels of government.

PS105 POLICE TRAFFIC ENFORCEMENT (3,0) 3 Cr.
General orientation to highway traffic administration and accident prevention. History of the traffic problem. Function of agencies responsible for highway traffic administration. Introduction to the use of radar, selective enforcement, and other techniques available to law enforcement to cope with the traffic problem.
Prerequisite: PS104

PS110 POLICE ADMINISTRATION (3,0) 3 Cr.
Principles of organization and management in law enforcement and public administration. The evaluation of administrative data. An analysis and evaluation of the problems in police administration, organization problems, and police planning and research.
Prerequisite: PS103

PS200 FORENSIC SCIENCE (2,2) 3 Cr.
Introduction to criminal investigation; technical methods used at the crime scene; development of clues; tracing of perpetrators; criminal investigation procedures including the theory of an investigation; conducting crime scenes; collection and preservation of physical evidence; analysis of the elements that constitute all crimes.
Prerequisites: PS103

PS201 FORENSIC SCIENCE II (2,2) 3 Cr.
The role of the Crime Laboratory in law enforcement organization; need
criminalistics operation; scope of a criminalistics operation; organizational orientation of the criminalistics laboratory.

Prerequisite: PS200

PS214 POLICE COMMUNITY RELATIONS
(3,0) 3 Cr.
Emphasis will be placed on the numerous and complex factors involved in the area of human relations as they affect policing and police management. An examination of prejudices, myths, and discrimination, how to control them, and their effects on the police.

PS218 CRIMINAL JUSTICE I (3,0) 3 Cr.
Elements and proof of frequent concern in law enforcement, with reference to principal rules of criminal liability. Importance of criminal law at the enforcement level is considered from crime prevention to courtroom appearance. Case analysis method is employed to study case precedents.

Prerequisite: PS103

PS219 CRIMINAL JUSTICE II (3,0) 3 Cr.
Rules of evidence of particular importance at the operational level in law enforcement, with emphasis on criminal procedure in important areas such as arrest, force, and search and seizure. Particular emphasis will be placed on the New York State Penal Law and Code of Criminal Procedure.

Prerequisite: PS218

PS226 JUVENILE DELINQUENCY (3,0) 3 Cr.
An introduction and an orientation to the causes and treatment of juvenile delinquency; an examination of the methods of handling juvenile offenders; police contact with offenders, including interviewing techniques, screening, and referrals to social agencies.

Prerequisite: PS103

PS227 ORGANIZED CRIME (3,0) 3 Cr.
The historic roots of organized crime; the causal factors of organized crime in American society; the activities, organization and economics of organized crime; the problems of corruption and graft; and the development of strategies to control the activities of organized crime.

PS250 INTRODUCTION TO PROBATION AND PAROLE (3,0) 3 Cr.
Study of detention facilities at the local and county levels with discussions aimed at a practical approach to the related problems. Particular attention will be given to admissions procedures, booking, personal property, fingerprinting and photographing, complete and final search, medical examination, individual segregation, security, and facilities.

PS251 CRIMINOLOGY (3,0) 3 Cr.
A survey of the theories which attempt to account for deviate behavior from the time of Cesare deBaccaria to modern sociological theories, such as differential association and differential opportunity. This course deals with the anthropological theories, biological and economical determinism, glandular dysfunctions, psychological and psychiatric theories of behavior. Designed for probation parole and correction officers preparing for promotional civil service examinations at all levels.

PS252 PROBATION AND PAROLE II (3,0) 3 Cr.
Special focus on the role of probation and parole within the modern judicial structure; administration, judicial, professional and community attitudes; professionalization of procedures; confidentiality of records; needs for social service and current counseling techniques; personnel structure and client relationships; staff development; research budgeting; special services; civil rights; delinquency; restoration; warrants revocation and cancellation; decision-making; prediction tables and devices; current concepts concerning the sex offender, the addict, the alcoholic; work-release and furlough programs; halfway houses; interstate compacts; executive clemency and good conduct procedures.

PS253 INTRODUCTION TO PENAL ADMINISTRATION (3,0) 3 Cr.
Penology as a segment of criminology; classical, neo-classical, positive and the "new" penology; procedures employed in custodial treatment; theory of rehabilitation; the penologist as a practicing criminologist; types of correctional institutions; the prison community; the prison world as a source of information to police agencies; institutional orientation, classification, and preparation for return to society; post-institutional treatment plans; sentencing procedures; and various plans of correctional administration.
RECREATION SUPERVISION

DR. MORTON THOMPSON, Chairman

Today, because of the shorter work week, highly competitive way of life, and increased leisure time available to most people, recreation has become an essential component of daily living. As a social force, the challenge and impact of recreation in the future will increase rather than diminish.

The program in Recreation Supervision is designed to prepare young men and women for careers as recreation technicians. Graduates of the two-year Associate Degree program are well-equipped to assist in the planning and conduct of recreation programs in a variety of community and institutional settings. In addition, the recreation technician provides clients with a variety of leisure time skills, interests and hobbies with carry-over values for healthful living. For all field experiences, student dress must conform with field agency protocol.

Typical Employment Opportunities

Hospitals
Boys Clubs and Girls Clubs
Settlement Houses
Camps
Churches

Y.M.C.A. and Y.M.H.A.
Y.W.C.A. and Y.W.H.A.
School Recreation
Community Recreation
Parks

RECREATION SUPERVISION

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
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<tr>
<td>EN 100 English Composition</td>
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<td>RS 100 Philosophy of Recreation</td>
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<td>RS 110 Recreation Skills &amp; Techniques</td>
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<td>RS 112 Officiating &amp; Coaching Techniques</td>
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<td>SO 219 General Psychology</td>
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<tr>
<td>EN 114 Speech</td>
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<td>RS 105 Organization of Community Recreation</td>
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<td>RS 107 Arts and Crafts</td>
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<td>RS 212</td>
<td>Recreation for III, Handicapped &amp; Aged</td>
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<tr>
<td>RS 205</td>
<td>Field Work in Recreation or</td>
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<tr>
<td>RS 215</td>
<td>Skills in Cultural Arts</td>
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<tr>
<td>PE 213</td>
<td>Golf</td>
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<tr>
<td>SO 232</td>
<td>Developmental Psychology</td>
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**Total Credits Required:** 12 or 14

### Fourth Semester

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<tr>
<td>SO 243</td>
<td>Black History</td>
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<td>RS 205</td>
<td>Field Work in Recreation or</td>
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<td>RS 210</td>
<td>Outdoor Recreation &amp; Camping</td>
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<td>RS 213</td>
<td>Recreation Facility &amp; Equipment Management</td>
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<td>PE 214</td>
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**Total Credits Required:** 13 or 15

*Students are required to provide their own transportation to off-campus field experiences.*

### Course Descriptions

*Numbers in parentheses indicate lecture and laboratory hours per week respectively.*

#### Recreation Supervision

**RS100 PHILOSOPHY OF RECREATION**

*(3,0) 3 Cr.*

An introduction to the history of recreation and meaning of leisure time; scope of programs concerning various types of recreation agencies; an analysis of urban environment as dictated by the changing time.

**RS105 ORGANIZATION OF COMMUNITY RECREATION**

*(3,0) 3 Cr.*

Problems and Practices in the organization of a community recreation program; the role of the sub-professional in a variety of settings (industrial, hospital, community) on-site visitation; care and maintenance of facilities and equipment; materials used in the program; clerical procedures involved in management.

**RS107 ARTS AND CRAFTS** *(2,2) 3 Cr.*

Practice and discussion of methods of creating and teaching arts and crafts. Techniques will include use of paper, scrap, wood, clay, paint, etc. Development of lesson plans and budgets. Lab. Fee.

**RS110 RECREATIONS SKILLS & TECHNIQUES**

*(2,2) 3 Cr.*

Development of skills in recreational activities including indoor and outdoor activities; emphasis on leadership in games of low organization, relays, and tumbling.

**RS111 RECREATION SKILLS AND TECHNIQUES**

*(2,2) 3 Cr.*

Development of skills in recreation activities including indoor and outdoor activities; emphasis on games and activities of high organization, tournaments, special events and selected sports activities concerned with outdoor recreation.
RS112 Officiating & Coaching Techniques (2,2) 3 Cr.
A course designed to teach recreation students methods of coaching and officiating major sports—football, basketball, softball, volleyball—includes laboratory practice of skills learned.

RS205 Field Work in Recreation (1,6) 4 Cr.
Class discussion and supervised field work assignments in a variety of recreation agency settings; leadership skills in relationship to all age groups; student field reports and class discussion on different types of field experiences.

RS210 Outdoor Recreation & Camping (3,0) 3 Cr.
History development and trends in outdoor recreation and camping. Analysis of programs as they apply to camps, parks, nature trails. Federal and State parks; living in the out-of-doors; camp counselor skills.

RS212 Recreation for the Ill, Handicapped and Aged (3,0) 3 Cr.
Introduction to recreation in the promotion of health, prevention of illness and rehabilitation of persons with physical, emotional or social disorders; course includes backgrounds of recreation for the ill, handicapped and aged. Programs will include those for hospitals, nursing homes, institutions for the retarded, health agencies and community programs for the handicapped.

RS213 Recreation Facility & Equipment Management (2,2) 3 Cr.
A course designed to provide the students with knowledge and ability of techniques of facility management, the make-up of various recreational facilities and visits to parks, museums, rinks, pools and golf courses. Recreation equipment will be studied with emphasis on need, types, quality and maintenance procedures.

RS215 Skills in Cultural Arts (2,2) 3 Cr.
Visitation and discussion of various cultural areas of interest. Visits will include the theatre, museums, ballet, art galleries and plays.
The Secretarial Science curriculum prepares students for careers through a concentration of specialized study in one of the four options offered by the department.

All students are required to take a core curriculum during their first year. This core program develops the basic fundamentals necessary for the second-year specialization in Advertising, Executive, Legal, or Medical. Each option is further enriched through a required sequence of study in English, mathematics and sciences; and the social sciences.

Typical Employment Opportunities

Technical Secretary: Advertising
Legal
Medical
Executive Secretary
Executive Assistant

Engineering Aide
Production Assistant
Research Assistant
Specifications Writer

SECRETARIAL SCIENCE

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
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<tbody>
<tr>
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Second Semester

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(1) Stenography Sequence—SS 111, SS 112; or SS 112 and BA Elective.
(2) Typewriting Sequence—SS 101, SS 102, SS 201; or SS 102, SS 201 and BA 162.
(3) SC 107 Biology for Medical Option.
### Secretarial Science—Advertising Option

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Total Credits Required: **68**

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Total Credits Required: 68

### SECRETARIAL SCIENCE—MEDICAL OPTION

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|        | 13 | 11 | 17 |

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<td>SC 209</td>
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|        | 13 | 10 | 17 |

Total Credits Required: 69
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Secretarial Science

**SS101 TYPEWRITING I (1,3) 2 Cr.**
Fundamentals of touch typewriting and basic techniques; simple tabulation and letter placement.

**SS102 TYPEWRITING II (1,3) 2 Cr.**
Prerequisite: SS101 or equivalent

**SS103 STENOGRAPHY (2,3) 3 Cr.**
Fundamental principles of Gregg shorthand and the application of these principles to an extensive shorthand vocabulary. Rapid reading of shorthand and introduction to dictation.

**SS112 TRANSCRIPTION (2,4) 3 Cr.**
Dictation and transcription from shorthand notes. Accuracy and speed in transcription techniques. Review of stenographic theory and improvement of shorthand vocabulary.
Prerequisite: SS111 or equivalent

**SS133 OFFICE MACHINES (1,3) 2 Cr.**
Efficient operation and use of adding and calculating machines (ten-key, full-key, rotary, key-driven), mimeograph and spirit duplicator, and dictating and transcribing equipment.

**SS201 TYPEWRITING III (1,3) 2 Cr.**
Development of speed and accuracy in advanced production work. Building of skill in typing office problem materials to meet business standards.
Prerequisite: SS102

**SS211 INTERMEDIATE TRANSCRIPTION (2,4) 3 Cr.**
Review of brief-forms, phrasing, prefixes and suffixes, and reading from shorthand plates. Dictation speeds from 60-120 wpm., with a high degree of accuracy in transcribed material.
Prerequisite: SS112

**SS212 ADVANCED TRANSCRIPTION (2,3) 3 Cr.**
Continuation of Intermediate Transcription. Dictation speeds from 100-140 wpm.
Prerequisite: SS211

**SS213 MEDICAL TERMINOLOGY (1,2) 2 Cr.**
Medical terminology developed through the use of stenographic roots, prefixes, and suffixes. Vocabulary development related to musculo-skeletal and nervous systems; eye, ear, respiratory, circulatory, and gastro-intestinal systems.
Prerequisite: SS112

**SS214 LEGAL TRANSCRIPTION (1,2) 2 Cr.**
Legal secretarial production work. Dictation emphasizes legal vocabulary and preparation of legal papers, specific instruments, appealing cases, commercial collections. Dictation speeds from 110-140 wpm.
Prerequisites: SS211; SS240

**SS215 MEDICAL TRANSCRIPTION (3,5) 5 Cr.**
Training in advanced shorthand principles and transcription of medical reports, operative procedures, and autopsies. Emphasis on building speed in dictation and transcription of medical letters and case histories.
Prerequisites: SS211; SS213

**SS240 LEGAL PROCEDURES I (1,2) 2 Cr.**
Typical procedures, civil and criminal, in the judicial system. Training in developing secretarial skills for the law office. Law vocabulary, legal documents, pleadings, and techniques for handling basic law office procedures.

**SS241 LEGAL PROCEDURES II (3,0) 3 Cr.**
Advanced law office procedures, calendaring and docketing of cases, briefs, litigation papers, probate, real estate practice, corporations.
Prerequisite: SS240

**SS250 OFFICE PRACTICE (2,2) 3 Cr.**
Principles of secretarial office techniques emphasized for the purpose of preparing the student to qualify as a potential high-level secretary.
SOCIAL SCIENCES

DR. FRANK J. CAVAIOLI, Chairman

The Department of Social Science offers courses in two basic areas of instruction, Behavioral, and Non-Behavioral Sciences. The Behavioral group includes Anthropology, Psychology, and Sociology, while Non-Behavioral area courses are given in Economics, Geography, Government, and History.

Although courses in the social sciences are among requirements met by all students, the depth and breadth of subject matter covered, in a wide variety of Departmental courses, additionally fits the needs of students choosing social science courses as electives. The Department serves the College in equipping the terminal degree student, and by assisting transfer students to attain qualifications which may be considered, in meeting entrance requirements of four-year colleges and universities.

Beyond the particular needs of the College at Farmingdale, the social sciences complement degree and certificate program requirements by lending a sense of balance, and forming an integral part of the student's exposure to higher education. Instruction in courses ranging from Anthropology to History supports the function of collegiate education in the United States, to educate more people in different ways. In the process, the Departmental areas of instruction strive to inculcate the liberalizing force of education, to inform, stimulate, and induce the habit of inquiry, and to erase pre-existent prejudices and misconceptions. To this end the Department of Social Science offers the following courses.

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Foundation Course

SO101  INTRODUCTION TO THE SOCIAL SCIENCES
(3,0) No degree credit
A general survey of the nature of the social sciences, their aims, and methodology. Applications of social science studies are made to the areas of government, consumer economics, and to personal adjustment and societal problems.
Behavioral Sciences

ANTHROPOLOGY

SO237 INTRODUCTION TO CULTURAL ANTHROPOLOGY (3,0) 3 Cr.
Designed to develop an understanding of the basic concepts: value systems, ideologies, and operational structures that motivate the variety of behavior patterns of the human animal. Students will acquire insights into a diversity of life styles through extensive exploration of primitive, developing, and contemporary cultures.

SO238 PROBLEMS IN CULTURE ANTHROPOLOGY (3,0) 3 Cr.
A comprehensive study of the major analytical concepts appropriate to an understanding of human behavior and social institutions, particularly as related to patterns of adaptation to changing social, political, technological, and ideological environments.
Prerequisite: SO237

PSYCHOLOGY

SO219 GENERAL PSYCHOLOGY I (3,0) 3 Cr.
This course presents basic concepts in the scientific study of intrapersonal behavior. The content includes an introduction to learning, motivation, emotion, sensation, perception, thought, and language. Each topic is considered within a psychological, behavioral, physiological, and developmental framework.

SO220 GENERAL PSYCHOLOGY II (3,0) 3 Cr.
This course presents basic concepts in the scientific study of interpersonal behavior. The content includes an introduction to child development, the normal and abnormal personality, therapy, social behavior, and assessment. The application of psychology to broad human problems is also considered.

SO232 DEVELOPMENTAL PSYCHOLOGY I (Child) (3,0) 3 Cr.
The study of child development encompasses a span of time beginning with conception and extending to the period of adolescence. The physical, intellectual, emotional, and social development of the child is considered. Particular emphasis is placed on child-training methods, family relationships, peer relationships, and on problems of emotional deprivation, and under- and overachievement in school. Individual differences in attitudes, values, and personal and social adjustments are also examined.
Prerequisite: SO219 or SO 220, or permission of department chairman.

SO233 DEVELOPMENTAL PSYCHOLOGY II (Adolescent) (3,0) 3 Cr.
This study focuses on changes within the individual during the period of adolescence, and on society's expectations regarding adolescent behavior. Issues of particular concern are those of preparation for an occupation, marriage, independence from parents, and achieving a sense of self-identity. The physiological, sociological, familial, cultural, and psychological influences are additionally explored.
Prerequisite: SO219 or SO220, or permission of department chairman.

SO234 SOCIAL PSYCHOLOGY (3,0) 3 Cr.
This course introduces the student to the behavior of the individual in society. Among the topics considered are: methods in social psychology, social attraction and hostility, the socialization process, social influence, attitude measurement and change, status and roles, the communication process, group dynamics, leadership, and culture and personality.
Prerequisite: SO219 or SO220

SO235 ABNORMAL PSYCHOLOGY (3,0) 3 Cr.
A consideration of the development and characteristics of behavior disorders. Topics include: causes of abnormal behavior, personality reactions to stress, psychoneurotic disorders, the functional psychoses, and therapeutic measures.
Prerequisite: SO219 or SO220, or permission of department chairman.
to Dutch and English rule. Seventeenth and eighteenth century events are emphasized, and selected later developments are examined, in describing the role of New York in the further development of the United States.

**SO214 HISTORY OF WESTERN CIVILIZATION I**
(3,0) 3 Cr.
Following a brief survey of ancient and medieval institutions, this course presents an analysis of early modern Western civilization, from 1500 to the end of the Napoleonic era, with emphasis on the major political, economic, and social developments.

**SO215 HISTORY OF WESTERN CIVILIZATION II**
(3,0) 3 Cr.
A continuation of SO214, tracing the modern world, from the Congress of Vienna to the present. Also analyzes political, economic, and social ideas and institutions fundamental to an understanding of contemporary civilization.

**SO227 HISTORY OF COMMUNISM**
(3,0) 3 Cr.
A study and analysis of the works of selected historians and writers, on the evolution of socialist and communist theories and practice. Special attention is given to the ideological and social background of communist revolutions, totalitarian control over society, the evolution of Communist parties in the world today, and their relationship to the capitalist West.

**SO243 BLACK HISTORY**
(3,0) 3 Cr.
Traces the history of the black man, from his African background through slavery, the Civil War, Reconstruction, and the emergence of Jim Crow laws. Additionally, northern migration, urbanization, and the making of a ghetto are examined. The nature of prejudice against Blacks and Puerto Ricans, approaches to the Black Revolution through the NAACP, the Urban League, CORE, Black Muslims, Black Nationalists, and the Black Panthers, are also discussed.

**SO244 MODERN AFRICAN HISTORY**
(3,0) 3 Cr.
A chronological survey of African history, from ancient African civilizations to the formation of modern African states. Major emphasis, in the course, is given to contemporary African issues and problems.

**SO247 LATIN AMERICAN HISTORY**
(3,0) 3 Cr.
Designed to increase understanding of the complexities of current Latin American policies and philosophies. The geographical, historical, and cultural backgrounds of Latin American peoples are described. Latin American institutions are examined and their effect on the nature of government. Finally, the role of Latin American in the contemporary world community is evaluated.

**SO248 HISTORY OF PUERTO RICO**
(3,0) 3 Cr.
A course describing the culture and civilization of Puerto Rico, from the time of its discovery to the present, and designed to provide an understanding of the Puerto Rican heritage. Economic and political developments, race relations, the influence of religion on the family, and economic and cultural contact with the United States, are also discussed.

**SO249 NON-WESTERN CIVILIZATION: AN INTRODUCTION**
(3,0) 3 Cr.
A broad survey of the forces and events that have contributed to the heritage of man, and the civilizations of contemporary Africa, India, Pakistan, Ceylon, China, and Japan, since ancient times. Includes a discussion of the historical development and cultural significance of Hinduism, Buddhism, yoga, and transcendental meditation.
PREPARATORY PROGRAMS

The College offers three preparatory programs which are designed to help selected applicants make up admission requirements and prepare them for admission to the College curricula. These programs were developed to give students successful experiences without losing sight of the overall goals of the programs.

In order to provide as much educational support as possible, the Student Personnel Office has assigned to this program special counselors who will work very closely with the students, the faculty, the administration, and the curriculum chairmen to make available to students information and assistance.

Experiences from the curriculum areas have been included to orient and prepare students for the skills and theory of some of the curricula to which they will eventually be admitted. In this way students will be introduced as early as possible to the career toward which they will be working.
DEVELOPMENTAL STUDIES*

*Program not offered in September 1971

PROFESSOR MAURO S. ZULLI, Coordinator

The program in Developmental Studies is designed to help students make up the requirements for admissions to the non-science/mathematics oriented curriculums on campus: Liberal Arts and Sciences, Biological Technology, Business Administration, Data Processing, Graphic Arts, and Secretarial Science, Food Processing Technology, Agriculture, Ornamental Horticulture, Medical Laboratory Technician.

DEVELOPMENTAL STUDIES

**First Semester**

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<td>15 - 0-2</td>
<td>15-16</td>
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</tbody>
</table>

Total Credits Required: 30

*When appropriate level of achievement is reached (or has been attained prior to admission) regular college courses would be substituted for preparatory courses.

**Credit hours depending on the course chosen in consultation with department chairman.
Pre-Engineering Technologies

*Program not offered in September 1971

Professor LeRoy Parsons, Acting Coordinator

Pre-Engineering Technology has been designed to enable those students who lack the minimum entrance requirements for the two year engineering technology programs gain entrance into career programs after successful completion of this one year course of study. Students are prepared to enter the following programs: Air Conditioning, Aerospace, Automotive, Chemical, Civil, Construction, Electro-Mechanical, and Photographic Technology.

Pre-Engineering Technologies

First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EN 112</td>
<td>Communication Skills</td>
<td>3</td>
<td>3</td>
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<tr>
<td>MA 120</td>
<td>*Mathematics</td>
<td>3</td>
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<tr>
<td>PH 100</td>
<td>Physics I</td>
<td>3</td>
<td>3</td>
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<tr>
<td>MT 100</td>
<td>Drafting (Mechanical)</td>
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<td>2</td>
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<tr>
<td>AT 100</td>
<td>Engineering Materials</td>
<td>2</td>
<td>2</td>
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<td><strong>Total</strong></td>
<td><strong>13</strong></td>
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Second Semester

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Hours per Week</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EN 100</td>
<td>English Composition</td>
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<td>MA 121</td>
<td>*Mathematics</td>
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<td>PH 101</td>
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<td>PR 110</td>
<td>Technical Orientation</td>
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Total Credits Required: 28–30

* When appropriate level of achievement is reached (or has been attained prior to admission) regular college courses would be substituted for preparatory courses.

** Depending upon electives.
Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Pre-Engineering Technology

PR110 TECHNICAL ORIENTATION (1,0) 1 Cr.

A student seminar encompassing the engineering technology curriculums, designed to provide the developmental student with an insight and motivation for the technology chosen. Discussion and projects will include the College, curricula, transfers, employment and a comprehensive analysis of today's technologies.

PRE-HEALTH AND SOCIAL SERVICES

*Program not offered in September 1971

PROFESSOR JAMES MAGEE, Acting Coordinator

This program has been designed to assist students to enter health and social service related curricula. The Pre-Health and Social Services Program is experimental; the curriculum will be taught as an integrated core rather than as separate subjects. It is expected that students who complete this program will enroll in the following curricula: Community Service Assistant, Dental Hygiene, Mortuary Science, Nursery Education, Nursing, Police Science, Recreation Supervision and Correctional Administration.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Hours per Week</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SO 102** Introduction to Human Relations</td>
<td>2 2 3</td>
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<tr>
<td>HS 102 Division Seminar</td>
<td>3 0 3</td>
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<tr>
<td>EN 117 Oral and Written Communication</td>
<td>2 2 3</td>
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<tr>
<td>MA — Mathematics</td>
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<tr>
<td>SC — Biology or Chemistry</td>
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<tr>
<td>PE 102 Physical Education</td>
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177
Second Semester

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<tr>
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<th>Course Name</th>
<th>Lecture</th>
<th>Laboratory</th>
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<td>HS 106</td>
<td>Human Services Seminar</td>
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<td>HS 108</td>
<td>Science Study Seminar</td>
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<td>2</td>
<td>1</td>
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<td>EN 118*</td>
<td>Oral and Written Communication</td>
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<td>2</td>
<td>3</td>
</tr>
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<tr>
<td>PE 103</td>
<td>Physical Education</td>
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<td>2</td>
<td>1</td>
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<tr>
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<td></td>
<td>11</td>
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<td>14</td>
</tr>
</tbody>
</table>

Total Credits Required: 30

* When appropriate level of achievement is reached (or has been attained prior to admission) regular college courses would be substituted for preparatory courses.

** This course is open to Pre-Health and Social Services students only.

Course Descriptions

Numbers in parentheses indicate lecture and laboratory hours per week respectively.

Pre-Health and Social Services

EN117, 118 ORAL AND WRITTEN COMMUNICATION (2) 3 Cr.
Developing skills in writing and speaking is the major emphasis of this course. Special effort is made to discover and overcome each student's weaknesses through writing exercises and student-teacher conferences. Students explore language especially as it is related to the process of learning and to the communication of personal and social values.

SO102 INTRODUCTION TO HUMAN RELATIONS (2,2) 3 Cr.
Students meet for four hours each week for group experiences and concept analysis toward the objectives of: 1. self-insight, 2. understanding the conditions which inhibit or facilitate group functioning, 3. understanding interpersonal operations in groups, and 4. developing skills for cooperative problem-solving behavior.

HS102 DIVISION SEMINAR (3,0) 3 Cr.
Students are introduced to curriculums in the Division of Health and Social Services. Students meet with faculty and graduates of the curriculums, visit, where possible, field placements and clinics, and participate as volunteers in public services allied with those curriculums of particular interest to each student.

HS106 HUMAN SERVICES SEMINAR (3,0) 3 Cr.
This course examines the extent and nature of health and social problems in contemporary society. Particular attention is given to the cultural bases which aggravate these problems and inhibit strategies for resolving them.

HS108 SCIENCE STUDY SEMINAR (0,2) 1 Cr.
Students enrolled in science courses meet for an additional two hours weekly to review content for examinations, clarify concepts, and develop effective study habits. There are different seminars for students in each of the sciences so that each seminar consists of students taking the same course.
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College Physician

College Physician

College Physician

College Physician

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M.S., SUNY, Albany
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<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>JAMES F. NIHAN, B.A., M.A.</td>
<td>Los Angeles State College</td>
<td>Vice President, Continuing Education</td>
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<tr>
<td>Luigi Perone, B.S., C. W. Post College; M.S., Long Island University</td>
<td>Associate Dean, Continuing Education</td>
<td></td>
</tr>
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<td>RONALD A. GERARD, B.B.A.</td>
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<tr>
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<td>SUNY, Binghamton; M.S., SUNY, Albany</td>
<td>Coordinator, Counseling</td>
</tr>
<tr>
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<td>Counselor</td>
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<td>Barnard College; M.A., Professional Diploma, Columbia University</td>
<td>Counselor</td>
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<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>NOEL PALMER, B.A.</td>
<td>William Penn College, B.S., M.A., Columbia University</td>
<td>Vice President, Urban Centers</td>
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<td>Adelphi University</td>
<td>Supportive Service Counselor</td>
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<td>S.U.N.Y., Farmingdale</td>
<td>Coordinator of Testing &amp; Tutoring Program</td>
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<tr>
<td>Dan M. Hester, Hofstra University</td>
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<td>Supportive Counselor</td>
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<tr>
<td>Martha Berning, B.A.</td>
<td>Adelphi University</td>
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<tr>
<td>Gloria Pitts, A.A.S.</td>
<td>S.U.N.Y., Farmingdale</td>
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### Division Chairmen

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<tr>
<th>Name</th>
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<tr>
<td>ALBERT E. HAAS, M.Ed.</td>
<td>Rider College; M.S., in Ed., University of Pennsylvania; Professional Diploma, Columbia University</td>
<td>Chairman of Business Division</td>
</tr>
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<td>JAMES O. IRWIN, B.Ed.</td>
<td>Illinois State University; M.S., Hofstra University</td>
<td>Chairman, Division of Engineering Tech.</td>
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<td>St. Francis; M.A., New York University; J.D., St. John’s University</td>
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<td>Ursula Schwerin, R.D.H.</td>
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</tr>
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</tr>
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Robert Russell, Vice President — Secy., J. & L. Adikes, Inc., 182-12 93rd Ave., Jamaica, N.Y.

Andre Viette, Martin Viette Nurseries, Route 25A, East Norwich, N.Y.

Wilbur E. Wright, Administrator for Parks & Outdoor Recreation, Conservation Dept. State of New York, State Office Building—Campus, Albany, N.Y.


James E. Cross, Nurseryman, Box 824, Cutchogue, N.Y.

Stanley Osowski, Meadowbrook Club, Cedar Swamp Road, Jericho, N.Y.

Police Science

Commissioner John L. Barry, Suffolk County Police Dept., Hauppauge, N.Y.

Inspector Theodore Donnelly, Personnel Bureau, Suffolk County Police Dept., Hauppauge, N.Y.

Deputy Commissioner John P. Finnerty, Suffolk County Police Dept., Hauppauge, N.Y.

Commissioner Louis J. Frank, Nassau County Police Dept., 1490 Franklin Avenue, Mineola, N.Y.

Dr. Robert R. J. Gallati, Director, NYS Identification & Intelligence System, Executive Park Tower, Stuyvesant Plaza, Albany, N.Y.

Inspector William H. Gardiner, Commanding Officer, Training Command, Suffolk County Police Dept., Hauppauge, N.Y.

Dr. Irving Goldaber, 6 Stratford Court, No. Bellmore, N.Y.

Deputy Commissioner James R. Ketcham, Nassau County Police Dept., 1490 Franklin Ave., Mineola, N.Y.

(Former) Commissioner Francis B. Looney, Farmingdale, N.Y.

Deputy Chief Inspector Walter A. Looney, Nassau County Police Dept., 1490 Franklin Ave., Mineola, N.Y.

Dr. Sidney Weinberg, Medical Examiner, County of Suffolk, Hauppauge, N.Y.

Judge Jack B. Weinstein, United States District Court, Eastern District of New York, Brooklyn, N.Y.

Mr. Orrell A. York, Executive Director, Municipal Police Training Council, 155 Washington Ave., Albany, N.Y.
Photographic Technology

Frank Adrian, Manager, Field Service Stations, Bell & Howell Co., 7100 McCormick Road, Chicago, Ill.
Dr. Eldon E. Bauer, Vice President in charge of Operations, Graflex, Inc., Rochester, N.Y.
Kenneth E. Becker, President, Calumet Manufacturing Co., 6550 N. Clark Street, Chicago, Ill.
James C. Forbes, Manager of Marketing, Photo Lamp Division, General Electric Co., Nela Park, Cleveland, Ohio
Phillip E. Nixon, Oakwood, RD 3, Huntington, N.Y.
John L. Morgan, Manager, Marketing Division, Photo Products Department, E.I. duPont de Nemours & Co., Inc., 1007 Market St., Wilmington, Del.
Herbert Morreall, Director of Technical Services, Photographic & Reproduction Division, General Aniline & Film Corp., 140 West 51st St., New York City, N.Y.
Joseph T. Morris, Executive Vice President, National Association of Photographic Manufacturers, 10 Rockefeller Plaza, New York City, N.Y.
Gordon H. Tubbs, Director, Education Markets Development, Eastman Kodak Company, 343 State St., Rochester, N.Y.
L. O. Wasomen, Training Manager, Pako Corporation, 6300 Olson Memorial Highway, Minneapolis, Minn.
Frank H. Wakeley, Director, Customer Equipment Service Division, Eastman Kodak Company, 343 State Street, Rochester, N.Y.

Recreation Supervision

Arthur H. Mittelstadt, Jr., Planning Associates, Education and Recreation Consultants, 291 Hempstead Avenue, W. Hempstead, N.Y.
Lewis P. Rogers, Superintendent of Recreation, Suffolk County Dept. of Parks, Recreation and Conservation, Montauk Highway, W. Sayville, N.Y.
Richard A. Fitch, Recreation Director, Town of Hempstead, Dept. of Parks & Recreation, Town Hall, Hempstead, N.Y.
John McGinn, Director of Recreation, Dept. of Recreation, Union Free School District No. 14, 37 East Rockaway Rd., Hewlett, N.Y.
John Gray, Jr., Director, Recreation & Parks, Town of Huntington, Hecksher Park Cottage, Prime Avenue, Huntington, N.Y.

Secretarial Science

Anne Moore, Engineering Female Placement, Grumman Aircraft Engineering Corp., Bethpage, N.Y.
Dr. Herman P. Saltz, 333 Main Street, Northport, N.Y.
Kathy Sullivan Werner, Secretary to Hon. Howard T. Hogan, Presiding Justice, Appellate Term of Supreme Court, State of New York, 9th & 10th Judicial Districts, Mineola, N.Y.
EVENING COLLEGE

DEGREE PROGRAMS

Degree programs are available to high school graduates or equivalent.

The Associate in Applied Science degree is offered in the following areas of study:

Advertising Art and Design
Biological Technology:
  Biological Research
  Oceanology
  Pest Control Technology
Business Administration:
  Accounting
  Management
  Marketing
Civil Technology:
  Highway Construction
Construction Technology:
  Building Construction
Data Processing
Dental Hygiene
Electrical Technology—Electronics
Mechanical Technology
Medical Laboratory Technology
Nursing
Police Science
Secretarial Science

The Associate in Science degree is offered in: Engineering Science.
The Associate in Arts degree is offered in: Liberal Arts and Sciences.
Certificate Programs

Students may elect to follow a comprehensive program extending over a period of three to five years. Upon successful completion of one of these programs a student will be granted an Evening College Certificate. The certificate programs include the following areas of study:

Advertising Art
Air Conditioning, Heating and Refrigeration Technology
Automotive and Diesel Technology
Business Administration:
  Accounting
  Management
  Marketing
Community Service Assistant:
  Mental Health Rehabilitation Worker
Construction Technology
Data Processing:
  Computer Programming
Electronics
Graphic Arts and Advertising Technology
Industrial Art
Mathematics and Science
Mechanical Technology:
  Manufacturing Methods
  Mechanical Design
Police Science
Recreation Supervision
Secretarial Science
STATE UNIVERSITY OF NEW YORK

Campuses

OFFICE OF THE CHANCELLOR, 8 THURLOW TERRACE, ALBANY, N.Y. 12201

UNIVERSITY CENTERS
State University at Albany • State University at Binghamton • State University at Buffalo • State University at Stony Brook

MEDICAL CENTERS
Downstate Medical Center at Brooklyn • Upstate Medical Center at Syracuse

COLLEGES OF ARTS AND SCIENCE
College at Brockport • College at Buffalo • College at Cortland • College at Fredonia • College at Geneseo • College at New Paltz • College at Old Westbury • College at Oneonta • College at Oswego • College at Plattsburg • College at Potsdam • College at Purchase • Upper Division College

SPECIALIZED COLLEGES
College of Forestry at Syracuse University • Maritime College at Fort Schuyler (Bronx)

AGRICULTURAL AND TECHNICAL COLLEGES (Two-year)
Alfred • Canton • Cobleskill • Delhi • Farmingdale • Morrisville

STATUTORY COLLEGES
College of Ceramics at Alfred University • College of Agriculture at Cornell University • College of Human Ecology at Cornell University • School of Industrial and Labor Relations at Cornell University • Veterinary College at Cornell University

COMMUNITY COLLEGES (Locally-sponsored two-year colleges under the program of State University)
Adirondack Community College at Glens Falls • Auburn Community College at Auburn • Borough of Manhattan Community College • Bronx Community College • Broome Technical Community College at Binghamton • Clinton Community College at Plattsburg • Community College of the Finger Lakes at Canadigua • Community College No. 9 at Long Island City • Corning Community College at Corning • Dutchess Community College at Poughkeepsie • Erie Community College at Buffalo • Fashion Institute of Technology at New York City • Fulton-Montgomery Community College at Johnstown • Geneseo Community College at Batavia • Herkimer County Community College at Ilion • Hostos Community College at South Bronx • Hudson Valley Community College at Troy • Jamestown Community College at Jamestown • Jefferson Community College at Watertown • Kingsborough Community College • Mohawk Valley Community College at Utica • Monroe Community College at Rochester • Nassau Community College at Garden City • New York City Community College • Niagara County Community College at Niagara Falls • North Country Community College at Saranac Lake • Onondaga Community College at Syracuse • Orange County Community College at Middletown • Queensborough Community College • Rockland Community College at Suffern • Schenectady County Community College at Schenectady • Staten Island Community College • Suffolk County Community College at Selden • Sullivan County Community College at South Fallsburg • Tompkins-Cortland Community College at Groton • Ulster County Community College at Stone Ridge • Westchester Community College at Valhalla