



State University of New York

LONG ISLAND CENTER

Bulletin

1961

State University of New York

The State University of New York was established by the State Legislature in 1948. It comprises 48 colleges. Twenty-eight of them are State colleges and 20 are locally-sponsored community colleges. Although separated geographically, all are united in the purpose to improve and extend opportunities for youth to continue their education after high school.

State University offers cultural and professional four-year programs in liberal arts; science, mathematics, and engineering; home economics; industrial and labor relations; veterinary medicine; ceramics; agriculture; forestry; maritime service; medicine; and teacher preparation, as well as two-year programs in a wide variety of fields, including technical courses in agricultural, industrial, health, and service areas. Several of its colleges offer graduate programs.

Governed by a Board of Trustees appointed by the Governor, State University of New York plans for the total development of state-supported higher education. Each college of State University is locally administered. Students should write directly to the institution in which they are interested for admission forms.

Although State University of New York is one of the largest state universities in the country, its students have the additional advantages of attending relatively small colleges.

The State University motto is "Let Each Become All He Is Capable of Being."

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STATE UNIVERSITY OF
NEW YORK

Long Island Center



1961

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Calendar

Spring Semester 1961

Classes Begin	February 14
University Day (Holiday)	March 30
Spring Interim Begins	March 31
Classes Resume	April 10
Final Examinations Begin	May 22
Memorial Day (Holiday)	May 30
Last Day of Semester	June 2
Commencement	June 4

Fall Semester 1961

Freshman Orientation Begins	September 18
Classes Begin	September 22
Thanksgiving Holiday Begins	November 23
Classes Resume	November 27
Christmas Holiday Begins	December 17
Classes Resume	January 2
Semester Examinations Begin	January 15
Last Day of Semester	January 27

Spring Semester 1962

Classes Begin	February 5
University Day (Holiday)	March 24
Spring Interim Begins	April 1
Classes Resume	April 9
Final Examinations Begin	May 21
Memorial Day (Holiday)	May 30
Last Day of Semester	June 1
Commencement	June 2

State University of New York Long Island Center

Council

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WILLIAM R. COE.....	Mill Neck, N. Y.
GEORGE B. COLLINS.....	Bellport, N. Y.
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JOHN P. MORGAN, II.....	Oyster Bay, N. Y.
NORMAN N. NEWHOUSE.....	Great Neck, N. Y.
HENRY VAN ARSDALE, JR.....	New York, N. Y.
WARD MELVILLE, <i>Honorary Chairman</i>	Stony Brook, N. Y.

Administration

JOHN F. LEE.....	<i>President</i>
LEONARD K. OLSEN.....	<i>Dean of Faculty</i>
THOMAS F. IRVINE.....	<i>Dean of Engineering</i>
ALLEN AUSTILL.....	<i>Dean of Students</i>
RUBEN E. WELTSCH.....	<i>Librarian</i>
DAVID C. TILLEY.....	<i>Director of Admissions</i>
FRANK J. CONWAY.....	<i>Business Officer</i>
TERRY F. LUNSFORD.....	<i>Assistant to the Dean of Faculty</i>
DONALD C. COOK.....	<i>Assistant Librarian</i>
LOUIS VINSON.....	<i>Assistant Librarian</i>

Faculty

- MARSHALL BIALOSKY.....*Associate Professor of Humanities and Music*
M. Music, Northwestern University
- FRANCIS T. BONNER.....*Professor of Chemistry*
Ph.D. Yale University *Chairman, Department of Chemistry*
- WALTER S. BRADFIELD.....*Professor of Engineering*
Ph.D., University of Minnesota
- MORRIS BRAM.....*Instructor of Mathematics*
B.S., City College of New York
- ALBERT D. CARLSON.....*Assistant Professor of Biology*
Ph.D., State University of Iowa
- ROBERT D. CESS.....*Associate Professor of Engineering*
Ph.D., University of Pittsburgh
- ELIZABETH COLEMAN.....*Instructor of Humanities*
M.A., Cornell University
- ROBERT L. DE ZAFRA.....*Assistant Professor of Physics*
Ph.D., University of Maryland
- RODMAN E. DOLL.....*Assistant Professor of Mathematics*
M.S., Polytechnic Institute of Brooklyn
- LEONARD EISENBUD.....*Professor of Physics*
Ph.D., Princeton University *Chairman, Department of Physics*
- JAMES W. ELLINGTON.....*Assistant Professor of Humanities*
Ph.D., University of Chicago
- FRANK C. ERK.....*Professor of Biology*
Ph.D., Johns Hopkins University *Chairman, Division of
Biological Sciences*
- ARNOLD M. FEINGOLD.....*Professor of Physics*
Ph.D., Princeton University
- EDWARD FIESS.....*Associate Professor of English*
Ph.D., Yale University
- JAMES FOWLER.....*Assistant Professor of Biology*
M.A., Columbia University

- DAVID FOX..... *Professor of Physics*
Ph.D., University of California
- WILLIAM C. FOX..... *Associate Professor of Mathematics*
Ph.D., University of Michigan
- LEONARD GARDNER..... *Professor of Education*
Ph.D., University of Chicago
Administrative Secretary,
Committee for Teacher Preparation
- DANIEL GASMAN..... *Instructor of History*
B.A., Brooklyn College
- SIDNEY GELBER..... *Professor of Philosophy*
Ph.D., Columbia University
- EDWARD E. GILBERT..... *Assistant Professor of Biology*
Ph.D., University of California
- HOMER B. GOLDBERG..... *Associate Professor of English*
A.M., University of Chicago
- THEODORE GOLDFARB..... *Assistant Professor of Chemistry*
Ph.D., University of California
- DONALD F. GOODMAN..... *Instructor of Humanities*
M.A., Fordham University
- BARRY M. GORDON..... *Assistant Professor of Chemistry*
Ph.D., Washington University
- HOWARD C. HOWLAND..... *Instructor of Biology*
M.S., Tufts University
- THOMAS F. IRVINE..... *Professor of Engineering and Dean of*
Ph.D., University of Minnesota
Engineering
- PETER B. KAHN..... *Assistant Professor of Physics*
Ph.D., Northwestern University
- ROBERT KALECHOFISKY..... *Assistant Professor of Mathematics*
B.S., City College of New York
- HARRY I. KALISH..... *Professor of Psychology*
Ph.D., State University of Iowa
- EDWARD M. KOSOWER..... *Associate Professor of Chemistry*
Ph.D., University of California

- SOL KRAMER..... *Associate Professor of Biology*
Ph.D., University of Illinois
- MARVIN KRISTEIN..... *Associate Professor of Economics*
Ph.D., New School for Social Research
- W. M. LAETSCH..... *Assistant Professor of Biology*
A.B., Wabash College
- EDWARD D. LAMBE..... *Associate Professor of Physics*
Ph.D., Princeton University
- WILLIAM J. LENOBLE..... *Assistant Professor of Chemistry*
Ph.D., University of Chicago
- ARTHUR R. LEPLEY..... *Assistant Professor of Chemistry*
Ph.D., University of Chicago
- RICHARD L. LEVIN..... *Professor of Humanities*
Ph.D., University of Chicago
- WILLIAM G. LISTER..... *Professor of Mathematics*
Ph.D., Yale University *Chairman, Division of Physical Science
and Mathematics*
- DONALD G. MALM..... *Assistant Professor of Mathematics*
Ph.D., Brown University
- ROBERT MARSH..... *Associate Professor of English*
Ph.D., Johns Hopkins University
- ABRAM V. MARTIN..... *Professor of Mathematics*
Ph.D., Duke University
- RUSSELL MILLER..... *Instructor of Mathematics*
B.S., Columbia University
- RICHARD M. MORSE..... *Professor of History*
Ph.D., Columbia University
- RICHARD A. MOULD..... *Assistant Professor of Physics*
Ph.D., Yale University
- HERBERT MUETHER..... *Associate Professor of Physics*
Ph.D., Princeton University
- BENJAMIN NELSON..... *Professor of Sociology and History*
Ph.D., Columbia University

- JOHN NEWFIELD..... *Professor of Humanities and Drama*
Ph.D., University of Vienna
- EDWARD B. O'BRIEN..... *Assistant Professor of Engineering*
Ph.D., Johns Hopkins University
- DANIEL C. O'NEIL..... *Instructor of German*
B.A., Cornell University
- MICHAEL J. PARENTI..... *Instructor of Political Science*
M.A., Brown University
- MORRIS PARSLow..... *Associate Professor of Foreign Languages*
Ph.D., Princeton University
- JOSEPH F. PEQUIGNEY..... *Assistant Professor of English*
Ph.D., Harvard University
- RAYMOND P. POGGENBURG, JR..... *Assistant Professor of French*
Ph.D., University of Wisconsin
- ROGER W. PROUTY..... *Associate Professor of History*
Ph.D., Columbia University
- FAUSTO RAMIREZ..... *Professor of Chemistry*
Ph.D., University of Michigan
- B. JAMES RAZ..... *Associate Professor of Physics*
Ph.D., University of Rochester
- MERRILL G. RODIN..... *Assistant Professor of Humanities*
M.A., University of California
- THOMAS ROGERS..... *Associate Professor of English*
Ph.D., University of Pennsylvania
- MARVIN J. ROSENBERG..... *Assistant Professor of Biology and Education*
M.S., Cornell University
- ROBERT F. SCHNEIDER..... *Assistant Professor of Chemistry*
Ph.D., Columbia University
- BERNARD SEMMEL..... *Assistant Professor of History*
Ph.D., Columbia University
- ROBERT E. SMOLKER..... *Associate Professor of Biology*
Ph.D., University of Chicago

- WILLIAM T. SNYDER..... *Associate Professor of Engineering*
Ph.D., Northwestern University
- JUDAH E. STAMPFER..... *Assistant Professor of English*
Ph.D., Harvard University
- ROBERT STERNFELD..... *Professor, Philosophy of Science*
Ph.D., University of Chicago
- HERBERT S. STREAN..... *Instructor in Psychology*
M.S., Boston University
- SEI SUJISHI..... *Associate Professor of Chemistry*
Ph.D., Purdue University
- CLIFFORD E. SWARTZ..... *Associate Professor of Physics*
Ph.D., University of Rochester
- BERNARD D. TUNIK..... *Associate Professor of Biology*
Ph.D., Columbia University
- A. HENRY VON MECHOW..... *Assistant Professor of Physical Education*
M.S., College of Education at Cortland
- WALTER WATSON..... *Associate Professor, Philosophy of Science*
Ph.D., University of Chicago
- ALLAN K. WILDMAN..... *Instructor in History*
B.D., University of Chicago
- GEORGE C. WILLIAMS..... *Associate Professor of Biology*
Ph.D., University of California at Los Angeles
- JAY C. WILLIAMS, JR..... *Professor of Social Science*
Ph.D., University of Chicago *Chairman, Division of Social Sciences*
- HAROLD ZYSKIND..... *Professor of Humanities*
M.A., University of Chicago *Chairman, Division of Humanities*

Student Officers, 1960-1961

Moderator, Student Polity.....	Rosemarie Capone
President, Senior Class.....	George May
President, Junior Class.....	Frederick Schubert
President, Sophomore Class.....	Philip Mighdoll
President, Freshman Class.....	Theodore Hajjar

Dean's Honor List, 1960-1961

Aronson, Amy	May, George
Becker, Robert	McCormack, Cornelia
Bender, Paul	McCullough, Roberta
Bogardus, Diane	Nevole, Nancy
Capone, Rosemarie	Newport, John
Chapter, John	Nicholson, Jesse
DaSilva, Lynne	Orleck, Michael
Davidson, Michael	Paldy, Judith G.
DiGiovanni, Diane	Paldy, Lester
Fischer, Madeleine	Pergament, Stuart
Huck, Mary Ann	Robinson, Dorothy
Kirschenbaum, Jay	Roecklein, Alan
Kropac, William	Schachtschneider, Marie-Luise
Lawson, Lois Lee	Schoenbaum, Cynthia
Liers, Henry	Schweitzer, Leslie
Lionells, Marylou	Sevian, Walter
Maiwald, Cecelia	Smith, Judith M.
Malcolm, David	Smith, Morton
Mamola, Karl	Stout, Judith
Marchese, Annette	Taylor, Judith
Marks, Burton	Weaver, Margaret

General Information

State University of New York—Long Island Center is the first major university center established within the State University of New York. Its mandate includes authority to award undergraduate and graduate degrees in the humanities, social sciences, biological sciences, physical sciences and mathematics, and in engineering. The plans for its growth anticipate development of the Long Island Center as a comprehensive university ranking with the best in the nation.

Established in 1957 at Oyster Bay as the State University College on Long Island, this new university center has built for excellence from its inception, starting with programs designed to educate scientists, mathematicians, engineers, and teachers of science and mathematics. Highly qualified teachers and research scientists were brought to its faculty in a variety of fields. Academic programs were based strongly on the liberal arts and sciences, and students were required to meet the highest standards of scholarship. It was recognized from the start that preparation of distinguished professionals in these fields required more than specialized training—it required university education in its best sense.

In its new role as a developing university, the Long Island Center will build on this firm beginning, but the pace of growth will be greatly increased. New degree programs are being developed as rapidly as faculty and facilities for them become available. Construction of its entirely new campus near Stony Brook-Setauket has been accelerated. Distinguished faculty members will be sought in greater numbers all over the nation, to establish graduate programs of teaching and research of which New York State can be proud.

Heavy demands will continue to be made on both student and teacher. The student is expected not only to master the fundamentals of his chosen field, but also to acquire those arts of inquiry and communication which will enable him to continue educating himself throughout his life—as a member of a profession, as an enlightened citizen, as a civilized human being. The curriculum challenges him to practice reasoned analysis and criticism in all his learning. Teachers are expected to combine thorough knowledge of their special fields with dedicated concern for the whole intellectual development of their students.

Here, then, will continue the traditional concerns of true university education—curricula based on fundamentals, high standards of

scholarship, and the search for new knowledge as an essential part of the educational process.

Degrees Granted

State University of New York—Long Island Center grants the Bachelor of Arts degree in the humanities and social sciences, the Bachelor of Engineering Science, and the Bachelor of Science in the biological sciences, physical sciences and mathematics. It is authorized to grant the Master of Arts, the Master of Science, and the Doctor of Philosophy degrees as appropriate faculty and facilities are available.

Accreditation

The Middle States Association of Colleges and Secondary Schools has granted accreditation to the State University of New York as a unit.

Oyster Bay Campus

Planting Fields, a 400-acre estate located just outside the Village of Oyster Bay, on Long Island, is the present campus of State University of New York—Long Island Center. The estate, a gift of the late William R. Coe to State University, encompasses vast lawns, formal gardens and an impressive arboretum of flowering trees and shrubs in a setting of rare beauty.

Coe Hall, a stately 60-room English Tudor mansion, houses administrative and faculty offices, the library, the infirmary, classrooms and a coffee shop. Spacious patios and formal gardens adjoining Coe Hall are used for formal and informal functions during fall and spring. A new complex of buildings, housing science and engineering classrooms, laboratories and faculty offices, has been added on the lower campus.

Also located on the lower campus are the residence halls, dining hall, recreation building, tennis courts and playing field. The recreation building is used for individual and team sport activities such as badminton, basketball, gymnastics, volleyball, weight-lifting and wrestling. The playing field is used for intramural sports.

The Planting Fields campus, though off the main highways, is readily accessible by automobile. Driving time from New York City is approximately one hour.

Oyster Bay is a Long Island Railroad terminus. Connections

may be made at Pennsylvania Station, Jamaica or Mineola. Taxi service is available at the Oyster Bay station.

Stony Brook Campus

In September, 1962 the State University Long Island Center will begin classes at its completely new, 400-acre campus in Stony Brook-Setauket on the North Shore of Suffolk County. Construction is now well under way on the first buildings of a major complex of modern university buildings there.

Available for use in 1962 will be a residence and dining hall for 600 students, a classroom and office building, a science laboratory building, and a service group. Shortly thereafter a library, two more science buildings, an engineering building, and a gymnasium will be completed. A fine arts center, a student-faculty center, more residence halls, and additional buildings for the social sciences, the sciences and engineering are now being planned.

Located directly south of the Stony Brook station of the Long Island Railroad and adjacent to Route 25A, this new campus will house the first major center of State University less than two hours' travel from metropolitan New York.

Admissions

Admission to Graduate Study

State University of New York—Long Island Center has been authorized by the Board of Regents to grant the degrees of Master of Arts, Master of Science and Doctor of Philosophy as appropriate faculty and facilities are available. Graduate programs in science, mathematics, engineering, the humanities and the social sciences are being developed during 1961-1962. During 1962-1963, with an expanded faculty and the greatly augmented facilities of the Stony Brook campus, it is expected that beginning graduate programs will be offered in several areas for qualified graduate students.

For further information, inquiry should be directed to the Office of Admissions, State University of New York—Long Island Center, Oyster Bay, New York.

Admission to Undergraduate Study

Undergraduate admission to the State University of New York—Long Island Center is open to men and women of serious intellectual purpose who have demonstrated academic competence and personal merit, and who are seeking full-time study. Candidates for admission are evaluated on the basis of academic qualifications and personal achievement without regard to race, color, creed or national origin.

New students are admitted only in the fall semester. Candidates are urged to begin the admissions process early, to take special care to complete all forms properly and to note carefully the date, location and time of required entrance examinations. The section in this bulletin devoted to application procedure should be read thoroughly for complete understanding. If questions arise that cannot be resolved by careful re-reading, do not hesitate to write or telephone the Office of Admissions. Only those applicants exercising this painstaking responsibility toward their applications can be assured full and timely consideration.

To qualify, a student should complete a minimum of eighteen (18) units in an accredited high school and graduate with an academic diploma. Wherever possible the student is expected to qualify

for a Regents diploma. Final acceptance is contingent upon satisfactory completion of the high school program and the receipt of an acceptable medical report from the family physician. Applicants are advised to discuss their qualifications with their college advisers before filing for admission.

A *recommended* program of secondary school preparation includes:

<i>Subject</i>	<i>Units</i>
English	4
Social Science (including one unit of American History)	3
Foreign Language (one language).....	3
Mathematics (including trigonometry or Mathematics 11).....	3½
Science (including chemistry and/or physics).....	3
Elective	1½

Students who have not completed the formal preparation suggested above may be considered for admission if they can demonstrate appropriate achievement.

Application Procedure for New Freshmen

To be considered for admission a candidate must file a completed application. Each applicant is responsible for making certain that his application is completed. State University cannot make adjustments for students who fail to observe the application procedure. The appropriate forms should be secured from the Office of Admissions, State University of New York—Long Island Center, Oyster Bay, New York. A completed application consists of:

State University of New York Application for Admission. (Yellow form A-1 which is mailed by the applicant, together with the application fee, to State University of New York, 8 Thurlow Terrace, Albany, New York.)

State University of New York High School Scholastic and Personality Record. (To be filled out by the student's high school and mailed directly to State University of New York—Long Island Center, Oyster Bay.)

State University Long Island Center Supplementary Appli-

cation. (This form will be mailed by the Office of Admissions to each applicant when the State Application Form A-1 is received.)

Test Scores:

New York State Selective Admissions Examination (See State University pamphlet *How to Apply for Admission* for details.)

College Entrance Examination Board Scholastic Aptitude Test. (See your high school guidance counselor or principal for information or write to College Entrance Examination Board, Box 592, Princeton, New Jersey.)

Any additional requirements requested by the Office of Admissions.

Transfer Students

Any applicant who has been registered at a degree-granting institution must apply as a transfer student. Only those students whose previous college records have been satisfactory in every respect are advised to apply. Each transfer student, in addition to completing the application procedure outlined for new freshmen, must submit the following:

An official transcript of record from each institution attended. If no grades were earned a statement of attendance and honorable dismissal is required.

A Course Evaluation Request (forms may be obtained from the Office of Admissions) for each course the applicant wishes considered for advanced standing.

Notification

Notices of admission to State University Long Island Center normally are mailed beginning the last week in April. In some cases earlier notification may be made. Some negative decisions may also be mailed prior to the general notification time.

Advanced Standing and Advanced Placement

Advanced standing may be granted to transfer students for appropriate courses completed with a minimum grade of C or its equivalent at recognized institutions. In some cases it will be necessary to certify competence by placement examination. Wherever possible, however, appropriate advanced standing will be given. Final

evaluation of credit will be accomplished upon the completion of one year of study in the State University Long Island Center.

Advanced placement may be extended to new freshmen who have completed advanced courses in secondary school or have developed academic competencies in other ways entitling them to special consideration. Candidates undertaking Advanced Placement courses in secondary school are expected to take the appropriate examinations and to request that their scores be forwarded to this institution. Others who wish to be considered should request a review of their qualifications in writing. In most cases a special examination or examinations will be required.

Military Personnel and Out-of-State Students

Wherever possible, applicants are urged to follow the standard admissions application procedure. For military personnel on active duty or out-of-state students, special testing arrangements can be made. Applicants who feel their circumstances warrant special arrangements should apply early, and should advise the Office of Admissions in writing of their particular problems.

Housing Accommodations

During the academic year 1961-62 State University Long Island Center will have no on-campus resident facilities for entering men and women. The Office of the Dean of Students maintains a file of approved off-campus housing, which meets the minimum standards of State University. Beginning in September, 1962 residence halls for approximately 600 students will be available on the Stony Brook campus.

Special Students

No programs are offered at present for part-time students or non-degree candidates.

Additional Information

Additional information may be obtained by writing to the Office of Admissions, State University of New York—Long Island Center, Oyster Bay, New York.

Appointments for interviews may be made by mail or by telephone (WAlnut 2-3700, extension 18). Appointments may be made between 10:00 a.m. and 4:00 p.m., Monday through Friday.

Academic Program

Graduate Degree Programs

State University of New York—Long Island Center is authorized to award the degrees of Master of Arts, Master of Science and Doctor of Philosophy, as appropriate, in the humanities, the social sciences, the physical and biological sciences, mathematics and engineering. During 1961-62 degree programs in these fields are under development. In the year 1962-63, with the greatly augmented facilities of the Stony Brook campus and with additions to the present faculty, it is anticipated that beginning graduate programs will be offered in several areas for qualified graduate students.

For further information, inquiry should be directed to the Office of Admissions, State University of New York—Long Island Center, Oyster Bay, New York.

Undergraduate Degree Programs

Undergraduate programs are offered leading to the following degrees:

Bachelor of Arts, with major study in the Humanities (English, Foreign Languages, Humanities or Philosophy) or in Social Sciences (Economics, History, Politics, Psychology, or Sociology-Anthropology).

Bachelor of Science, with major study in Mathematics, Physics, Chemistry, Physical Sciences or Biological Sciences.

Bachelor of Engineering Science.

Students wishing to teach in secondary schools may take Bachelor of Arts or Bachelor of Science degree programs which include New York State requirements for teacher certification.

All undergraduate programs are conceived as broadly-based courses of study including significant work in the liberal arts, in science and mathematics and in the student's field of major study. Each candidate for an undergraduate degree must take a minimum of 128 credit hours in courses approved for his program. Each stu-

dent's program is planned with the help of an academic adviser so as to meet the general University requirements for graduation and the requirements for the degree in the student's major field of study.

Requirements for the Bachelor of Engineering Science are listed beginning on page 51 of this bulletin.

The following are University requirements of all candidates for the Bachelor of Arts or the Bachelor of Science, in addition to requirements specified for the area of major study:

English I

Humanities I and II

Social Science I and II

One year each of biological science, mathematics and physical science, in courses approved for the student's program

Two semesters of study outside the major field, in courses approved for the student's program

Interdivisional Seminar

Foreign Language: Each candidate for a Bachelor of Arts or a Bachelor of Science degree is required before graduation to pass a proficiency examination in a foreign language approved for his program. Proficiency is defined as that level of achievement normally attained during approximately two years of college study in the language. Each student concentrating in biological science, a physical science or mathematics should consult the statement of degree requirements in the major field of his interest for the languages which may be approved for his program.

Teacher Certification: Students desiring certification for secondary school teaching must take at least 18 credit hours in education, including human growth and behavior, 3 credit hours; methods and materials of teaching, 3 credit hours; practice teaching, 6 credit hours; history of education, 3 credit hours; and philosophy of education, 3 credit hours. Academic advisers will inform each student of the courses designed to satisfy these requirements in his major field.

Division of Biological Sciences

The Division of Biological Sciences was formed during 1960-61 as prelude to a considerable expansion of the programs offered in this area. The organization of the Division is being formulated with the help of an advisory committee of distinguished biological scientists.

Bachelor of Science in Biology

The undergraduate program in the Division is designed to acquaint the biology major with a number of significant areas in modern biology. Graduates of this program are prepared for advanced study in the biological sciences, secondary school biology teaching, and for certain positions in industry and research.

In his special field the biology student takes a required core of three one-year courses plus a summer course in field ecology, and undertakes in his senior year an individual research project requiring independent and responsible work. Most students also will take elective courses in descriptive biology, and in the physical sciences.

Biology 10-11 provides a basis for all advanced work in the area of biology, while at the same time offering to the non-biology student an experience in dealing with the theoretical and laboratory materials which contribute directly to the development of an experimental science.

Biology majors follow this introductory course with the series of three required year courses (Biology 20-21, 30-31, 40-41) which establish the foundations of modern biological thought and work.

Each of these courses is a unity, but the three are related. The course in cytology, genetics and evolution concentrates on those phenomena which deal with the temporal continuity of biological systems, as well as the genetic control of physiological processes in a single cell or organism generation. Upon this basis is built an understanding of the physiology of the cell, and how these functional processes contribute to the emergence of form in living matter. In the senior year the combined knowledge of the prior courses is used to consider function on the organ level, especially those functions having an integrative role in the organism, and to consider behavior of the organism as a whole. Biology 40-41 takes into account the structural, functional, genetic and behavioral bases which necessarily contribute to an understanding of the organism as the entity selected in evolution.

For the student who plans to teach, or who wants to add to his background in certain areas of descriptive biology, elective courses will be made available which cover the entire range of the plant and animal kingdoms.

Requirements for the Degree in Biology:

In addition to the general University requirements for graduation, the following are required for the Bachelor of Science in Biology:

Biology 20-21 (Cytology, Genetics and Evolution)

Biology 30-31 (Cellular Physiology and Experimental Morphogenesis)

Biology 35 (Field and Theoretical Ecology)

Biology 40-41 (Integrative Mechanisms and Ethology)

Biology 49 (Senior Project)

Chemistry 10,11 (General Chemistry)

Physics 22-23 (General Physics)

Foreign Language: The proficiency requirement must be met in French, German or Russian.

Sample Program:

Here is a typical degree program leading to the Bachelor of Science in Biology. Details of each student's program are worked out with his academic adviser.

First Year

Biology 10-11
Mathematics 10-11
Humanities I
Social Science I
English I

Second Year

Biology 20-21
Physics 22-23
Chemistry 10,11
Social Science II
Humanities II

Third Year

Biology 30-31
Social Science 30,31
Foreign Language
Electives
Electives*

Third Summer

Biology 35

Fourth Year

Biology 40-41
Interdivisional Seminar
Biology 49
Electives*
Foreign Language

*Prospective secondary school teachers of Biology will normally elect Education 30 and Biology 39 in the junior year, and Education 42 in the senior year.

Division of Humanities

The Division of Humanities offers students a choice of four programs leading to the Bachelor of Arts degree.* Each program is designed to meet two needs: students who wish to prepare themselves for graduate study in a special area of the humanities are provided with a basis for later scholarly work, and students who do not plan graduate study are provided with a basis for intelligent participation in the intellectual and cultural life of the community.

Qualified students will normally be admitted at the beginning of the junior year to degree programs with concentration in English, a foreign language and literature, philosophy, or "humanities." The first three of these programs focus on particular branches of the humanities; the fourth is designed for students interested in subjects bridging two or more branches or in problems requiring interdisciplinary skills (such as comparative literature or communication of ideas).

Each student's academic adviser helps him to plan a coherent and individualized sequence of courses meeting requirements for the Bachelor's degree.

Students planning to teach in secondary schools may adapt their programs to meet certification requirements for teachers in New York State. Only programs concentrating on English literature or on a foreign language and literature are recommended for that purpose, however.

Components of the Programs

All programs in the Division of Humanities include a general component consisting of four year-long courses: English I, Humanities I, Humanities II and Humanities III. The Humanities sequence begins with an emphasis on imaginative works—in music, visual art and such literary forms as tragedy, comedy, novel, lyric poetry and epic—and moves toward an emphasis on purely intellectual works in history and philosophy. Culmination is reached in an examination of the problems of judgment in the arts. Throughout the sequence students become acquainted with a wide variety of works of art, past and present, in diverse media and genres. Intellectual habits are acquired through practice in the arts of appreciation, analysis, interpretation

*These programs will be operative for the graduating class of 1963 and subsequent classes. Students graduating earlier will take programs planned for their individual backgrounds and interests.

and criticism. Skills of communication—begun in English I with an investigation of the persuasive, logical and expressive functions of language—are developed throughout the sequence in written exercises and class discussions.

The general courses are thus conceived as integral parts of a cumulative process, supplying a foundation for later specialized work by giving students knowledge of the major areas of humanistic endeavor, experience of outstanding achievements in each area, and practice in the methods of discovering and judging the peculiar values embodied in man's creations.

Each program also contains a specialized component made up of courses in particular fields of humanistic study. These courses are designed to help the student acquire knowledge of a delimited subject matter, training in the methods of inquiry appropriate to that subject matter, familiarity with related fields, and practice in pursuing independent and critical investigation.

Time is provided in each program for elective courses allowing the student freedom to cultivate interests he may have outside his field of concentration.

Undergraduate Concentration in English

The undergraduate program with concentration in English is designed to build on the student's foundation in general education, and to provide (1) training in the major disciplines and methods of literary study; (2) a broad acquaintance with the range of English and American literature; and (3) advanced work in some of the most important related fields of the humanities. The emphasis of the program is on breadth and diversity, both in the literary materials studied and in the literary disciplines. A limited amount of flexibility is provided to meet students' special interests, without permitting premature specialization.

In addition to meeting the general University requirements for the Bachelor of Arts degree, the student choosing English as his field of concentration must complete the following:

A. *Study in area of concentration*

English 23 (The English Language)

English 39 (Shakespeare)

Approved electives (six semesters) in English and American literature, chosen for a proper distribution among the major historical periods and literary genres.

B. *Study in related fields*

Humanities III

Electives in philosophy and/or comparative literature (two semesters)

Foreign Language: Third-year college level study of literature in an approved foreign language (waived for some students desiring teacher certification)

C. *Departmental examination*

Each student must complete satisfactorily a department examination over a prescribed list of books covering the range of English and American literature. The examination is normally taken in the senior year.

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in English. Details of each student's program are worked out with his academic adviser.

First Year

Humanities I
Social Science I
Mathematics 10-11
Biology 10-11
English I

Second Year

Humanities II
Social Science II
Physics 10-11
Foreign Language
English 23 and semester
elective

Third Year

Humanities III
Social Science 30,31
Foreign Language
English 30 and 32
English 35 and 39

Fourth Year

Interdivisional Seminar
Foreign Language
Philosophy 30,31
English 38 and 40
English 41 and semester
elective

Undergraduate Concentration in a Foreign Language

The undergraduate program with concentration in a foreign language is designed to build on the student's foundation in general education, and to provide (1) training in the skills of reading, speaking and writing one or more foreign languages; (2) instruction in the nature and structure of language and the modes of analysis appropriate to it; (3) an introduction to the literatures of the languages taught; and (4) training in the methods of teaching and research in language and literature.

All students having prior training in the language they intend to study are required to take a placement test to determine at what level they should enter the program. The program outlined here represents the minimum requirements for those students who have had no significant preparation in the language. Students achieving advanced standing through placement will be able to take additional courses in language and literature.

In addition to meeting the general University requirements for the Bachelor of Arts degree, the student choosing a foreign language as his field of concentration must complete the following:

A. *Study in area of concentration*

French, German, or Russian 22-23 (Composition and Conversation)

French, German, or Russian 30-31 (Major Writers)

French, German, or Russian 32-33 (Advanced Composition and Conversation)

B. *Study in related fields*

Humanities III

Courses in a second foreign language or approved electives in other related fields

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in French. Details of each student's program are worked out with his academic adviser.

First Year

Humanities I
English I
Social Science I
Biology 10-11
Mathematics 10-11

Third Year

Humanities III
Social Science 30,31
French 20-21
French 22-23
German 10-11

Second Year

Humanities II
Social Science II
Physics 10-11
French 10-11
Electives

Fourth Year

Interdivisional Seminar
French 30-31
French 32-33
German 20-21
Electives

Undergraduate Concentration in Humanities

The undergraduate program with concentration in Humanities is designed to build on the student's foundation in general education, and to provide for further interdisciplinary study in the humanities.

At the core of the program are courses dealing with problems or perspectives of importance in the analysis and criticism of all humanistic works. These courses involve respectively the study of values, of ideas, of intellectual and artistic history, and of language or symbols.

This is accompanied by study in two of the traditional fields of the humanities. The student is encouraged to pursue interests developed in the interdisciplinary aspects of his general education and in his core courses. If justified by the focus of the student's interest, work in three fields may be arranged or advanced study in a foreign language may be specified.

In his senior year the student acquires experience through an advanced seminar in making independent and comprehensive judgments of some of men's aspirations, arts and achievements which themselves span traditional fields.

In addition to meeting the general University requirements for the Bachelor of Arts degree, the student choosing Humanities as his field of concentration must complete the following:

A. *Core study*

1. Values

Humanities III (including a variant in visual art or music)

2. Ideas

Philosophy 30,31 (Major Thinkers in the History of Philosophy)

3. Language

Approved semester elective in rhetoric or linguistics

4. Intellectual and Artistic History

Humanities 32 (Arts and Ideas of the Renaissance)

B. *Study in special fields*

Electives (six semesters) chosen in consultation with the academic adviser from these fields:

- Philosophy
- Literature
- Foreign Language
- Music
- Art

C. *Advanced interdisciplinary study*

Humanities 48-49 (Advanced Seminar)

Sample Program:

Here is a possible program leading to the Bachelor of Arts degree with concentration in Humanities. Details of each student's program are worked out with his academic adviser.

First Year

English I
Humanities I
Social Science I
Biology 10-11
Mathematics 10-11

Second Year

Humanities II
Social Science II
Physics 10-11
Foreign Language
Approved electives

Third Year

Humanities III
Social Science 30,31
Foreign Language
Humanities 21 and 32
Philosophy 30,31

Fourth Year

Interdivisional Seminar
Humanities 48-49
Approved electives
Approved electives
Free electives

Undergraduate Concentration in Philosophy

The undergraduate program with concentration in Philosophy is designed to build on the student's foundation in general education, and to help the student acquire (1) awareness of the breadth of philosophical problems in terms of subject-matter areas (ethics, logic, metaphysics, etc.) and of temporal development and changes in treatment of problems; (2) working knowledge of an area of philosophy as it applies to problems in related subject-matter areas; (3) a moderate ability to inquire independently into philosophical problems; and (4) a sense of the peculiar values of such inquiry.

In addition to meeting the general University requirements for the Bachelor of Arts degree, the student choosing Philosophy as his field of concentration must complete the following:

A. Study in area of concentration

Philosophy 23 (Ethics)

Philosophy 24 (Logic)

Philosophy 30,31 (Major Thinkers in the History of
Philosophy: Ancient, Medieval and Modern)

Philosophy 40,41 (Analysis of Philosophic Texts)

Philosophy 42,43 (Advanced Seminar)

One of the following:

Philosophy 33 (Aesthetics)

Philosophy 34 (Political Philosophy)

Philosophy 35 (Philosophy of Science)

Philosophy 36 (Advanced Logic and Philosophy
of Mathematics)

B. Study in related fields

Humanities III

Approved electives outside Philosophy (three semesters)

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in Philosophy. Details of each student's program are worked out with his academic adviser.

First Year

English I
Humanities I
Social Science I
Mathematics 10-11
Biology 10-11

Second Year

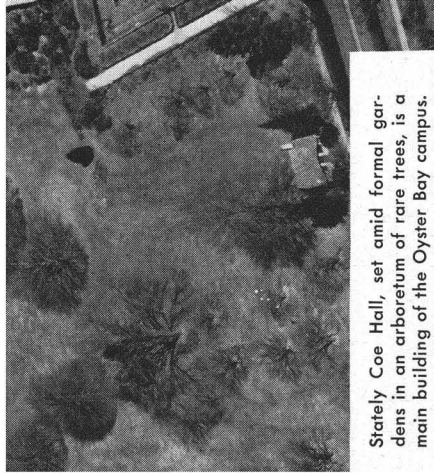
Humanities II
Social Science II
Physics 10-11
Foreign Language
Philosophy 23 and 24

Third Year

Humanities III
Social Science 30,31
Philosophy 30,31
Foreign Language
Philosophy 33 and semester
elective in related field

Fourth Year

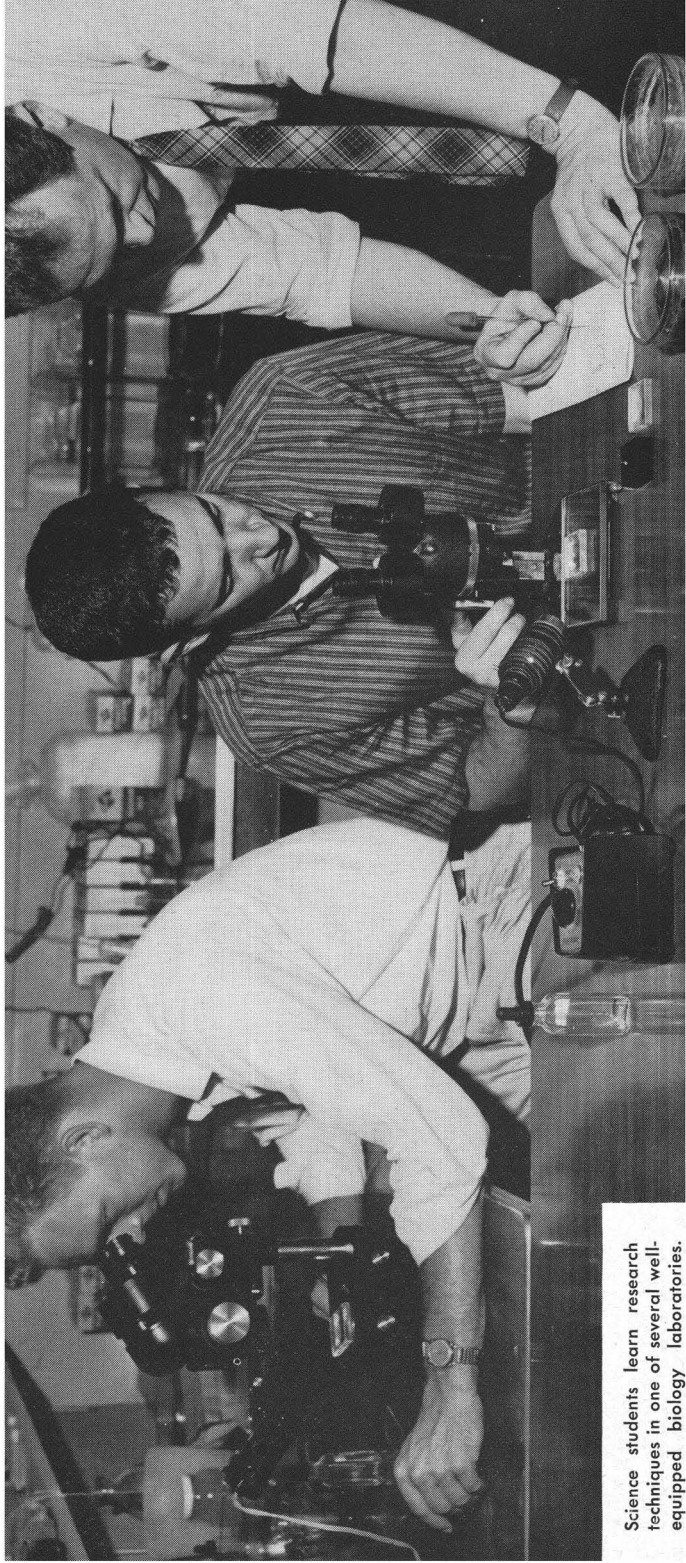
Interdivisional Seminar
Philosophy 40,41
Philosophy 42,43
Electives in related field
Free electives



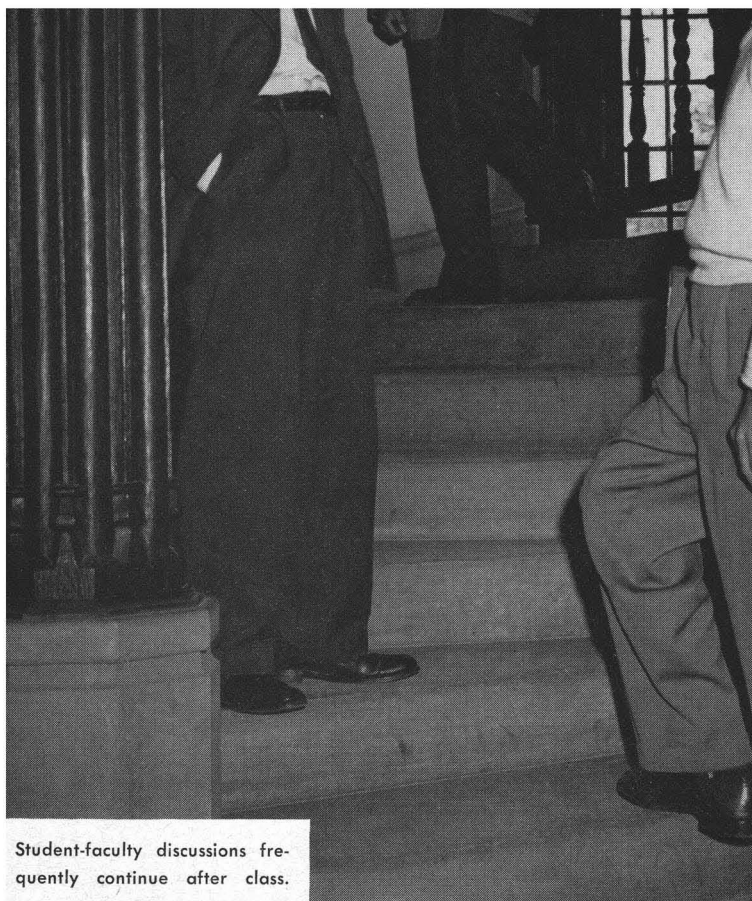
Stately Coe Hall, set amid formal gardens in an arboretum of rare trees, is a main building of the Oyster Bay campus.

The courtyard outside the Coffee Shop is a favorite with students.





Science students learn research techniques in one of several well-equipped biology laboratories.

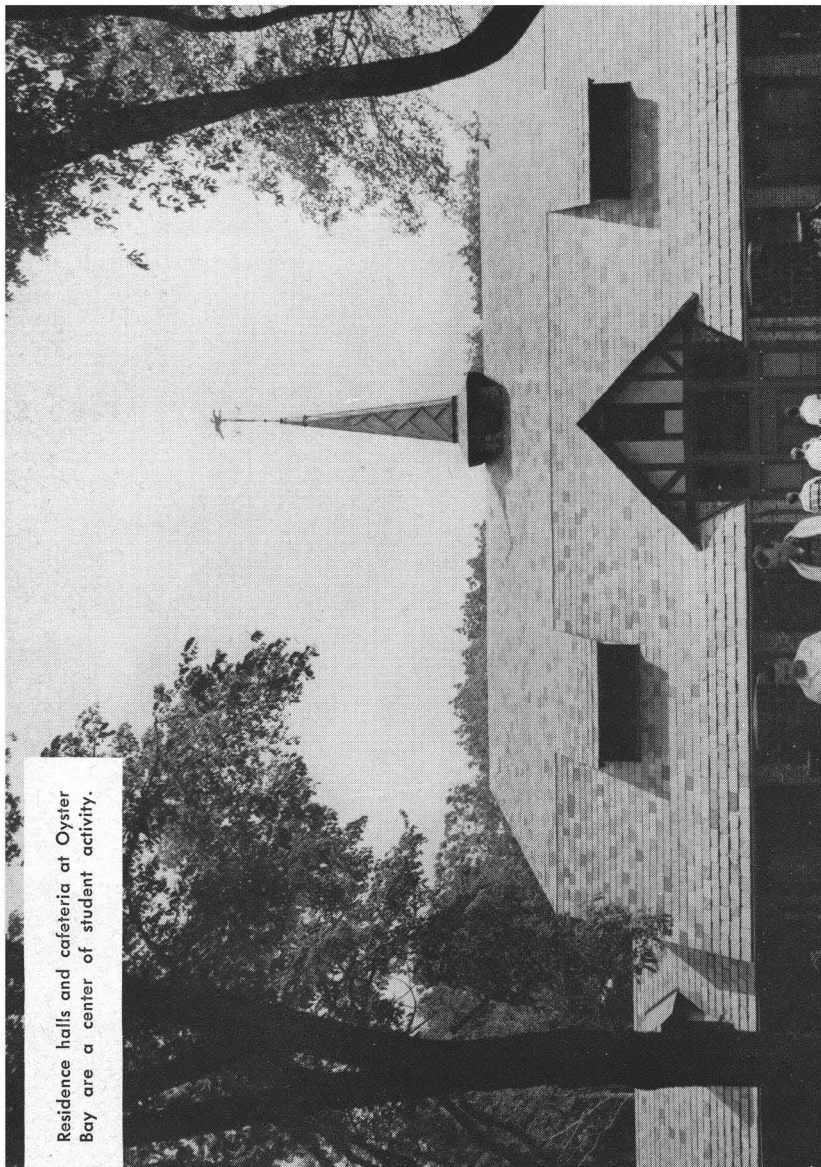


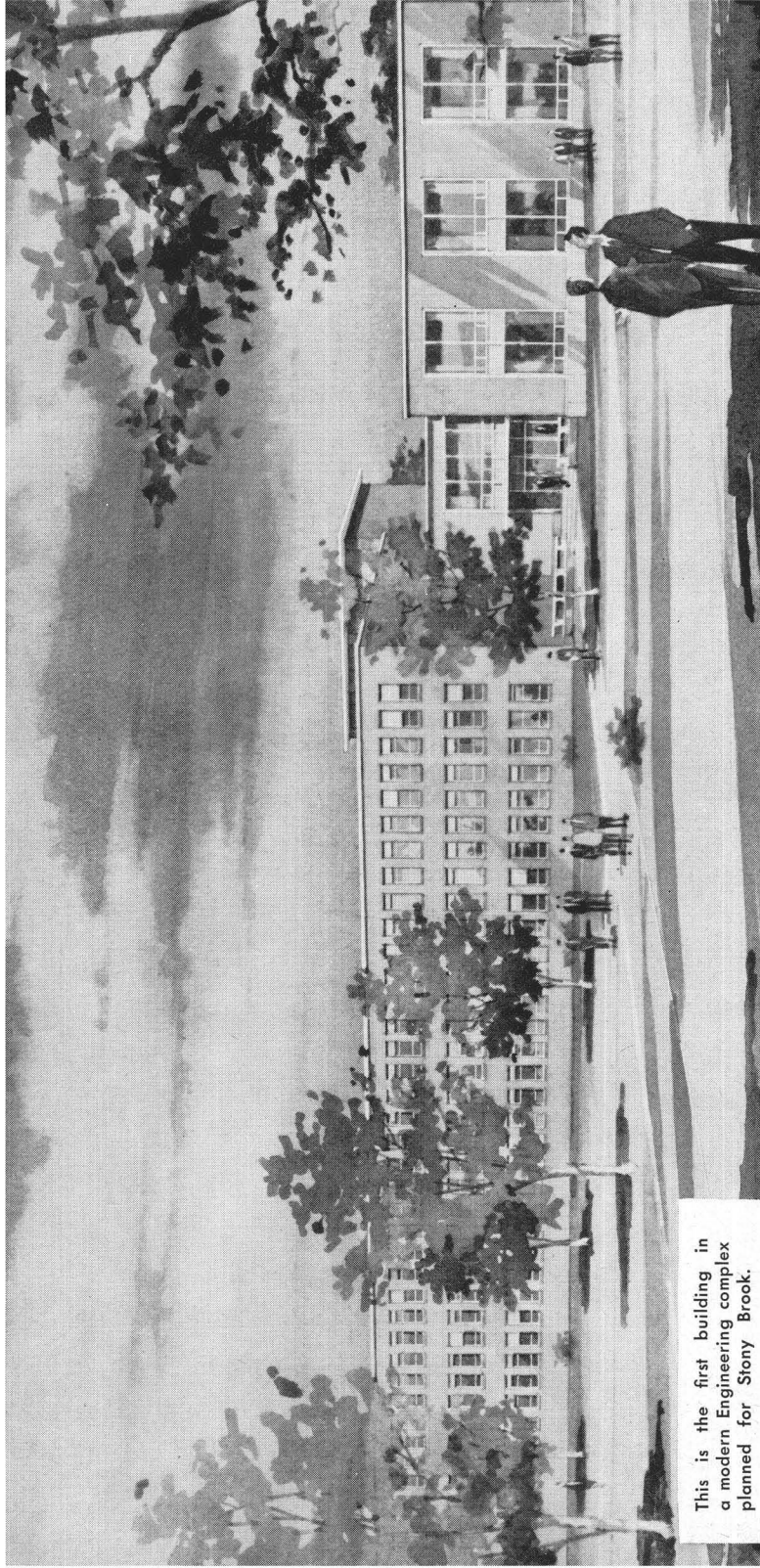
Student-faculty discussions frequently continue after class.



The Coe Hall library reading room attracts students for quiet study.

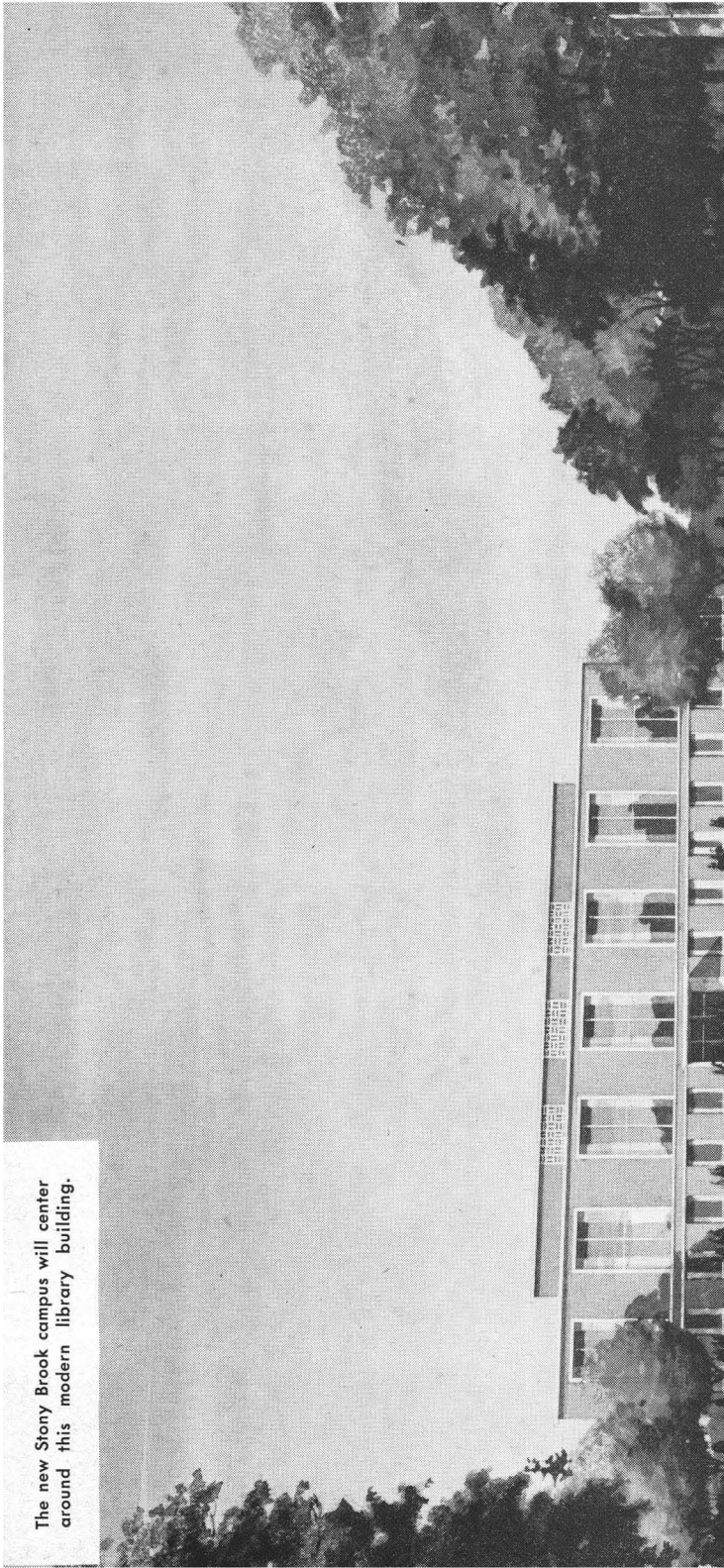
Residence halls and cafeteria at Oyster Bay are a center of student activity.





This is the first building in a modern Engineering complex planned for Stony Brook.

The new Stony Brook campus will center around this modern library building.



Division of Physical Science and Mathematics

Bachelor of Science in Chemistry

The undergraduate program in chemistry is designed to serve as a terminal program preparing the student for industrial or other employment, to prepare the student for graduate study in chemistry, or for secondary school teaching of chemistry.

The chemistry program is based upon a core of four fundamental courses required of all chemistry majors. These comprise one year's work each in general chemistry, quantitative chemistry, organic chemistry and physical chemistry. In addition to these courses the student is required to elect at least two semesters of advanced course work in chemistry.

At least one year of college physics, and mathematics through the calculus, are considered minimal necessities for the chemistry major. The student is required to complete one year of physics and two years of mathematics as prerequisites to the physical chemistry course.

Requirements for the Degree in Chemistry:

In addition to the general University requirements for graduation, the following are required for the Bachelor of Science in Chemistry:

Chemistry 10,11 (General Chemistry)

Chemistry 20,21 (Quantitative Chemistry)

Chemistry 30,31 (Organic Chemistry)

Chemistry 32,33 (Physical Chemistry)

Two semesters of elective course work in Chemistry

Mathematics 10-11 and 20-21 (Calculus) or 12-13 and 22-23 (Analysis)

Physics 22-23, or Physics 10-11 and 20-21 (General Physics)

Foreign Language: The proficiency requirement must be met in German.

Sample Program:

Here is a typical degree program leading to the Bachelor of Science in Chemistry. Details of each student's program are worked out with his academic adviser.

First Year

Chemistry 10,11
Mathematics 12-13
English I
Humanities I
Social Science I

Second Year

Chemistry 20,21
Physics 22-23
Mathematics 22-23
Humanities II
Social Science II

Third Year

Chemistry 30,31
Chemistry 32,33
German 10-11
Humanities III
Electives*

Fourth Year

Advanced Chemistry electives
Biology 46-47
Interdivisional Seminar
German 20-21
Electives*

*Prospective secondary school teachers of chemistry are expected to elect Education 30 and Chemistry 39 as juniors, and Education 42 during the senior year.

Bachelor of Science in Mathematics

The undergraduate program in mathematics is designed to serve as a general terminal program, as preparation for the secondary school teacher of mathematics, and as a basis for graduate study in either mathematics or applied mathematics. The required courses provide a common core of instruction in the principle branches of mathematics, a review of their evolution, and independent study in a special topic. The additional required work and any elective courses taken in mathematics will allow the student to improve his preparation for more specialized objectives.

A student intending to qualify for the degree in mathematics should complete either Mathematics 10-11 and 20-21 or Mathematics 12-13 and 22-23 by the end of his second year. Normally entering students will be placed in Mathematics 10-11. Students who wish to keep open the possibility of a major program in a physical science, and students whose interests are in applied mathematics, may be placed in Mathematics 12-13. Any prospective mathematics student who may wish to enroll in Mathematics 12-13 should discuss his placement with his academic adviser during Orientation Week.

Prospective secondary school teachers of mathematics should elect Mathematics 39 and 47. A program including these courses satisfies the mathematics requirements for temporary teaching certification in New York State.

Students who intend to enter graduate study in applied mathematics should elect Mathematics 42,43.

Prospective graduate students in mathematics should elect Mathematics 30-31, 35 and 46.

Requirements for the Degree in Mathematics:

In addition to the general requirements of all students for graduation, the following are requirements for the Bachelor of Science in Mathematics:

- Mathematics 10-11, 20-21, and 30-31 (Calculus)
or 12-13, 22-23, and 42,43 (Analysis)
- Mathematics 34 (Linear Algebra)
- Mathematics 35 (Algebraic Structures)
or 39 (The Number System)
- Mathematics 44 (Introduction to Topology)
- Mathematics 46 (Topology)
or 47 (Geometry)

Mathematics 49 (History and Foundations)

Mathematics 48 (Independent Study)

Physics 10-11 or 22-23 (General Physics)

Three additional credit hours in Mathematics courses numbered 30 or above.

Foreign Language: The proficiency requirement must be met in French, German or Russian.

Sample Programs:

Here are typical degree programs leading to the Bachelor of Science in Mathematics for students with different interests.* Details of each student's program are worked out with his academic adviser.

1. *Standard Mathematics Program*

First Year

Mathematics 10-11
Chemistry 10,11
English I
Humanities I
Social Science I

Second Year

Mathematics 20-21
Biology 10-11
Physics 22-23
Humanities II
Social Science II

Third Year

Mathematics 30-31
Mathematics 34 and 35
Humanities III
Foreign Language
Electives

Fourth Year

Mathematics 44 and 46
Mathematics 42 and 49
Mathematics 37 and elective
Interdivisional Seminar
Foreign Language

2. *Prospective Teacher of Mathematics:*

First Year

Mathematics 10-11
Biology 10-11
English I
Humanities I
Social Science I

Second Year

Mathematics 20-21
Physics 22-23
Humanities II
Social Science II
Foreign Language

Third Year

Mathematics 30-31
Mathematics 34 and 37
Education 30
 and Mathematics 39
Social Science 30,31
Foreign Language

Fourth Year

Mathematics 44 and 47
Education 40-41
Education 42
Mathematics 49 and elective
Electives

*In addition to the courses listed in these programs, each student is expected to begin independent study in his third year. See description of Mathematics 48.

3. *Emphasis on Applied Mathematics:*

First Year

Mathematics 12-13
Physics 10-11
English I
Humanities I
Social Science I

Second Year

Mathematics 22-23
Physics 20-21
Chemistry 10,11
Humanities II
Social Science II

Third Year

Mathematics 34 and 37
Mathematics 42,43
Humanities III
Foreign Language
Electives

Fourth Year

Mathematics 44 and 46
Mathematics 35 and 49
Biology 46-47
Interdivisional Seminar
Foreign Language

Bachelor of Science in Physics

The undergraduate program in physics is designed to prepare students for graduate work in the field and for research work which can be undertaken with a thorough knowledge of physical principles and a wide familiarity with physical phenomena. The emphasis in this program is on the development of an understanding of the major classical theories of physics. A broad introduction to the phenomena and concepts of relativity physics and atomic physics is also given. Highly specialized applications of physics are introduced, sometimes for their own intrinsic interest but usually as a means for exemplifying the significance of important concepts. Since mathematics forms an essential language for the description of physical theories, considerable mathematical training, especially in analysis, is required. The program is designed to provide a firm base on which further study and training in research can be built.

Students seeking teacher certification may be able to complete the undergraduate program in physics in four years if they can take the equivalent of the certification requirements outside of the regular academic program. This may be done, for example, by summer school work, by satisfying the language requirements through examination, or by entering with advanced placement. However, prospective secondary school teachers of physics are advised to consider the program leading to the Bachelor of Science in Physical Science.

Requirements for the Degree in Physics

In addition to the general University requirements for graduation, the following are requirements for the Bachelor of Science in Physics:

- Physics 10-11 and 20-21 (General Physics)*
- Chemistry 10,11 (General Chemistry)
- Mathematics 12-13 and 22-23 (Analysis)*
- Physics 30-31 (Electromagnetic Theory)
- Physics 32 (Mechanics)
- Physics 33 (Statistical Physics)

*In special circumstances students who have taken Mathematics 10-11 and 20-21 instead of Mathematics 12-13 and 22-23, and Physics 22-23 instead of Physics 10-11 and 20-21, will be allowed to work for the Bachelor of Science in Physics. Permission of the Chairman, Department of Physics, is necessary before entering the junior year, and evidence of special proficiency in mathematics may be required.

Physics 34-35 (Junior Laboratory)
Physics 40-41 (Modern Physics)
Mathematics 42,43 (Advanced Analysis)
Foreign Language: The proficiency requirement must be met in French, German or Russian.

Sample Program:

Here is a typical degree program leading to the Bachelor of Science in Physics. Details of each student's program are worked out with his academic adviser.

First Year

Physics 10-11
Mathematics 12-13
English I
Humanities I
Social Science I

Second Year

Physics 20-21
Mathematics 22-23
Chemistry 10,11
Humanities II
Social Science II

Third Year

Physics 30-31
Physics 32 and 33
Physics 34-35
Mathematics 42,43
Humanities III
Foreign Language

Fourth Year

Physics 40-41
Physics 44-45
Biology 46-47
Interdivisional Seminar
Foreign Language
Electives

Bachelor of Science in Physical Science

The undergraduate program in physical science is designed primarily for prospective secondary school teachers of science. It includes less intensive work in physics and chemistry than do the undergraduate programs in those fields. By a selection of courses from both fields, however, the program allows the student to acquire a broad, basic background in physical science. The program also is designed to meet New York State requirements for permanent teacher certification in physics and chemistry.

Each student planning to teach physics or chemistry in secondary schools will be advised individually whether he should enter the program leading to the Bachelor of Science in Physical Science or should undertake a teacher education program leading to the Bachelor of Science in Physics or the Bachelor of Science in Chemistry.

Requirements for the Degree in Physical Science

In addition to the general University requirements for the Bachelor of Science degree, the following are requirements for the degree in Physical Science:

- Mathematics 20-21 and 30 (Calculus)
or Mathematics 22-23 (Analysis)
- Ten semesters of physical science chosen by the student in consultation with his academic adviser, from among the following courses in the Physics and Chemistry programs:
 - Chemistry 10,11 (General Chemistry)
 - Chemistry 20,21 (Quantitative Chemistry)
 - Chemistry 30,31 (Organic Chemistry)
 - Physics 10-11 and 20-21 (General Physics)
 - Physics 22-23 (General Physics)
 - Physics 36-37 (Electricity and Magnetism)
 - Physics 46-47 (Modern Physics)
- Physical Science 39 (Materials and Methods in Teaching Physical Science) or Chemistry 39 (Materials and Methods in Teaching Chemistry)
- Education 30 (Human Growth and Development) and Education 42 (Practice Teaching)
- Foreign Language: The proficiency requirement must be met in French, German or Russian.

Sample Program:

Here is a typical degree program leading to the Bachelor of Science in Physical Science. Details of each student's program are worked out with his academic adviser.

First Year

English I
Humanities I
Social Science I
Mathematics 10-11
Chemistry 10,11

Third Year

Social Science 30,31
Foreign Language
Mathematics 30 and
semester elective
Physics 36-37
Education 30 and
Physical Science 39

Second Year

Humanities II
Social Science II
Mathematics 20-21
Chemistry 20,21
Physics 22-23

Fourth Year

Education 40-41
Education 42
Foreign Language
Biology 46-47
Physics 46-47 or Chemistry
30,31

Division of Social Sciences

The undergraduate programs in social science are designed to serve twin purposes: liberal education and preparation for graduate study in a special field in social science. The development of the separate fields in social science has made it clear that it is no more possible in these times to master sociology without knowledge of anthropology, psychology and history than it is to master history or politics without the insights which sociology and psychology provide. The introduction to the methods, problems, and principles of a discipline which is appropriate for a student looking forward to graduate study is in good part that which a liberally educated man should have. A Bachelor of Arts degree indicates a mastery of knowledge appropriate to an educated man.

The student is expected to indicate to his academic adviser as early as possible his intention to enter a Bachelor of Arts degree program in social science. This notice must be given before the beginning of the junior year if the student is to complete his program within four years.

Students who hope to qualify as social studies teachers in secondary schools through New York State teacher certification after four years should make this known to their advisers so that their programs can be planned to include the necessary certification requirements. Such students will be urged to plan continued study through the Master's degree, if possible.

*Requirements for the Bachelor of Arts degree in Social Science**

In addition to the general University requirements, the following are required of candidates for the Bachelor of Arts degree in social science:

1. *Divisional study*: Understanding of the basic principles, problems and modes of inquiry in the cultural-behavioral sciences, the policy sciences, and their overlapping areas, as demonstrated by performance on comprehensive examinations.
2. *Special field study*: Knowledge of the subject matter of a special field (economics, history, politics, psychology or sociology-anthropology), as demonstrated by performance on comprehensive examinations.

*Unless otherwise noted, requirements stated below will apply to the graduating class of 1963 and subsequent classes. Students graduating before 1963 will take programs planned for their individual backgrounds and interests.

3. *Independent study*: Capacity for independent study of a problem in social science (in a special field or interdisciplinary area), as demonstrated by submission of a major research paper and participation in a Senior Seminar.

Each student's program is arranged by his academic adviser to include courses which will help him fulfill these requirements. Divisional study will usually include Social Science 30,31, Social Science 32,33, and Social Science 40,41. Special field study will usually include four semesters of courses in a single special field and three semesters of courses in a related area or areas of social science as approved by the adviser. Each student will participate in a Senior Seminar involving an independent research paper.

Prospective secondary school teachers of social studies will normally substitute Education 30 and Social Science 39 for the related field requirement in the junior year, and will elect Education 42 in the senior year.

Typical programs in the major areas of concentration are outlined below.

Undergraduate Concentration in Economics

In addition to meeting the general requirements of the University and the Division, the student choosing Economics as his field of concentration is required to pass examinations covering the materials in the five courses listed below and in three approved courses from related fields, and to complete satisfactorily the Senior Seminar in Economics.

- Economics 30 (Money, Banking and Monetary Theory)
- Economics 31 (Business Fluctuations and Fiscal Policy)
- Economics 32 (Principles of Economic Analysis)
- Economics 33 (Monopoly and the American Economy)
- Mathematics 20-21 (Calculus)

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in Economics. Details of each student's program are worked out with his academic adviser.

First Year

English I
Humanities I
Social Science I
Mathematics 10-11
Foreign Language

Second Year

Humanities II
Social Science II
Physics 10-11
Biology 10-11
Mathematics 20-21

Third Year

Humanities III
Social Science 30,31
Social Science 32,33
Economics 30,31
Economics 32,33

Fourth Year

Social Science 40,41
Economics 40-41
Interdivisional Seminar
History 30 and Sociology-
Anthropology 36
Politics 32 and semester
elective

Undergraduate Concentration in History

In addition to meeting the general requirements of the University and the Division, the student choosing History as his field of concentration is required to pass examinations covering the materials in four of the courses listed below and in three approved courses from related fields, and to complete satisfactorily a Senior Seminar in History. At least one subject must be chosen from each of Groups A, B and C.

Group A

History 30 (The Ancient World)

History 31 (The Medieval World)

Group B

History 32 (Early Modern Europe)

History 33 (Europe 1775 to Present)

History 34,35 (American History)

History 37 (British History 1760 to Present)

Group C

History 36 (The Expansion of Europe)

History 38 (Russia)

History 39 (Latin America and the West Indies)

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in History. Details of each student's program are worked out with his academic adviser.

First Year

English I

Humanities I

Social Science I

Mathematics 10-11

Foreign Language

Second Year

Humanities II

Social Science II

Biology 10-11

Physics 10-11

Electives

Third Year

Humanities III

Social Science 30,31

Social Science 32,33

History 30,31

History 32 and 36

Fourth Year

Social Science 40,41

History 40-41

Interdivisional Seminar

Politics 33 and Sociology-

Anthropology 34

Economics 32 and semester
elective

Undergraduate Concentration in Politics

In addition to meeting the general requirements of the University and the Division, the student choosing Politics as his field of concentration is required to pass examinations covering the materials in four of the courses listed below and in three approved courses from related fields, and to complete satisfactorily the Senior Seminar in Politics. At least one subject must be chosen from each of Groups A, B and C.

Group A: Behavioral Study of Political Systems

Politics 32 (Political Leadership)

Politics 34 (Political Attitudes and Propaganda)

Group B: History of Political Issues and Institutions

Politics 31 (American Political Issues)

Politics 33 (The Political Response to Industrialization,
England and Western Europe)

Politics 35 (The Political Response to Industrialization,
Non-Western Examples)

Group C: Political Thought

Politics 42 (The Concept of Scientific Politics)

Politics 43 (Human Nature and Politics)

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in Politics. Details of each student's program are worked out with his academic adviser.

First Year

English I

Humanities I

Social Science I

Mathematics 10-11

Foreign Language

Third Year

Humanities III

Social Science 30,31

Social Science 32,33

Politics 31 and 32

Politics 35 and semester
elective

Second Year

Humanities II

Social Science II

Physics 10-11

Biology 10-11

Electives

Fourth Year

Social Science 40,41

Politics 40-41

Interdivisional Seminar

Politics 42 and Sociology-

Anthropology 32

Economics 32,33

Undergraduate Concentration in Psychology

An undergraduate program with concentration in Psychology is now under development. The student choosing Psychology as his field of concentration will be expected to meet the general requirements of the University and the Division. In addition he will be required to pass examinations over materials in four courses in Psychology and three courses in related fields, and to complete satisfactorily a Senior Seminar in Psychology.

Details of the program will be described in a later publication. Further information may be secured, as soon as it is available, from the Office of Admissions, State University of New York—Long Island Center, Oyster Bay, New York.

Sample Program:

Here is an outline of a Bachelor's degree program with concentration in Psychology, designed to meet the requirements of the University and the Division of Social Sciences, and to include exemplary courses appropriate to undergraduate study in this field. Each student's program will be planned with the help of an academic adviser.

First Year

English I
Humanities I
Social Science I
Mathematics 10-11
Biology 10-11

Third Year

Humanities III
Social Science 30,31
Social Science 32,33
Psychology 30-31
Two approved semesters
in Psychology

Second Year

Humanities II
Social Science II
Physics 10-11
Mathematics 20-21
Biology 20-21

Fourth Year

Social Science 40,41
Interdivisional Seminar
Senior Seminar in Psychology
Sociology-Anthropology
20 and 21
Politics 42 and semester
elective

Undergraduate Concentration in Sociology-Anthropology

In addition to meeting the general requirements of the University and the Division, the student choosing Sociology-Anthropology as his field of concentration is required to pass examinations covering the materials in four of the courses listed below and in three approved courses from related fields, and to complete satisfactorily a Senior Seminar in Sociology and Anthropology. At least one subject must be chosen from each of Groups A, B and C.

Group A: Elements of Societies and Cultures

Sociology-Anthropology 20 (Human Groups, Organizations and Societies)

Sociology-Anthropology 21 (Introduction to Anthropology)

Group B: Social Systems and Contemporary Social Trends

Sociology-Anthropology 32 (Social Systems and Community Patterns)

Sociology-Anthropology 34 (Social Problems, Conflicts and Movements)

Group C: Problems of Integration: Society, Self, Culture

Sociology-Anthropology 36 (Technology, Industrialization and Social Change)

Sociology-Anthropology 38 (Self, Society, Culture and Mental Health)

Sample Program:

Here is a typical program leading to the Bachelor of Arts degree with concentration in Sociology-Anthropology. Details of each student's program are worked out with his academic adviser.

First Year

English I
Humanities I
Social Science I
Mathematics 10-11
Foreign Language

Second Year

Humanities II
Social Science II
Physics 10-11
Biology 10-11
Electives

Third Year

Humanities III
Social Science 30,31
Social Science 32,33
Sociology-Anthropology 20
and 21
Sociology-Anthropology 32
and 38

Fourth Year

Social Science 40,41
Sociology-Anthropology
40-41
Interdivisional Seminar
Politics 31 and Psychology 30
History 39 and semester
elective

Engineering

Bachelor of Engineering Science

The undergraduate program in engineering science consists of intensive study in the basic sciences of mathematics, physics and chemistry as well as comprehensive work in the engineering sciences of fluid mechanics, solid mechanics, thermodynamics, electrical theory and properties of matter. In addition, the curriculum embraces broad training in the humanities, social sciences, and communications.

The fact that traditional engineering departments are not represented at State University is deliberate. Engineering science is concerned with areas of knowledge which are fundamental to all of the conventional engineering fields and by its nature seeks to avoid overtraining in existing engineering techniques and applications. A degree of specialization in particular engineering areas is provided in the senior year through elective courses and senior projects.

Engineering experiences in the last decade have illustrated that engineers today must have a new depth and breadth of scientific knowledge to cope with the problems of a rapidly changing technology. State University's undergraduate engineering program is designed to provide this fundamental scientific background and to develop engineers who can creatively translate the knowledge of basic science into engineering results.

The graduates of this curriculum will find many opportunities in both public and private engineering activities. They will also be well prepared to continue for further study at the graduate level. State University Long Island Center is developing advanced engineering programs leading to the Master of Science and Doctor of Philosophy degrees.

Requirements for the Bachelor of Engineering Science

A candidate for the degree Bachelor of Engineering Science will be recommended for the degree by the Faculty upon completion of the following requirements:

1. *Required Courses:* Credit for or exemption from each of the following:
English I
Humanities I and II
Social Science I and II

Physics 10-11 and 20-21

Chemistry 10,11

Mathematics 12-13 and 22-23

2. *Electives*: Six credit hours during the junior year in the Humanities, Social Sciences, Biology or Interdivisional Seminar.
3. *Concentration*: A program of concentration in Engineering Science approved by the Curriculum Committee.

A student may be exempted without credit from any of the required courses specified in Section 1 above on the recommendation of the course chairman.

Every student admitted without advanced standing or exemption is required to register for English I, Humanities I, Social Science I, Mathematics 12 and Physics 10 in his first year.

Sample Program:

Here is a typical degree program leading to the Bachelor of Engineering Science. Details of each student's program are worked out with his academic adviser.

First Year

Mathematics 12-13

Physics 10-11

Humanities I

English I

Social Science I

Second Year

Mathematics 22-23

Physics 20-21

Chemistry 10,11

Humanities II

Social Science II

Third Year

Engineering 30-31

Engineering 32-33

Engineering 34-35

Engineering 36-37

Engineering 38 and

Mathematics 37

Approved electives

Fourth Year

Engineering 40 and 41

Engineering 42 and

technical elective

Engineering 44-45

Technical electives

Free electives

Courses of Instruction

Listed below are the courses offered by the Long Island Center in 1961-1962. Courses are listed by college, division and department except for interdivisional courses and seminars, which are described in a separate section. Details of course descriptions are subject to change without notice.

Courses designed to meet general University requirements bear appropriate subject area designations and Roman numerals, e.g. Humanities I. Except as noted in the descriptions, these are year courses.

All other courses bear appropriate divisional, departmental or subject area names with a two-digit number for each semester, e.g. Physics 33. The first digit indicates the year the course normally is taken by students concentrating in that area. A year course of the latter type is listed by its component semester designations which are separated by a hyphen, as in Mathematics 20-21.

Semester courses usually are listed separately (e.g. English 36). Some semester courses are so interdependent in subject matter that they must be taken in sequence, and a passing grade in the first semester is prerequisite to continuation in the second semester. For such courses, the semester course numbers are listed together separated by a comma, as in Chemistry 10,11.

Division of Biological Sciences

Biology 10-11—Introduction to Biological Science

An introductory course in biological science which acquaints the student with the nature of living organisms in terms of their structure and function; their reproduction, heredity and development; their interrelationships with the environment; and their evolution. The concepts and principles upon which biological science depend are critically examined, providing a framework for understanding life processes and their associated phenomena.

To illustrate the general problems of arriving at valid conclusions in the biological sciences, a number of examples of scientific inquiry which use living organisms as objects of investigation are studied in considerable detail. Closely correlated with the class discussions are extensive laboratory exercises which encourage the student, through independent work, to develop skill in the design, performance, and critical analysis of experiments. Three hours of lecture or discussion and one three-hour laboratory period per week for one year.

8 credit hours

Biology 20-21—Cytology, Genetics and Evolution

In this course the emphasis is on the cytological and genetic mechanisms which underlie and provide the theoretical basis of our modern understanding of the origin, development and modification of the individual, the population, the race, and the species.

The course includes study of the cell, with emphasis on the nucleus; cytogenetics and cytoevolution; Mendelian systems; the physical gene; physiological genetics; population genetics; mutation; and genetics and the origin of life. The laboratory work deals with standard methods in cytology and genetics, and with an investigation of methods appropriate to the study of microevolution in the laboratory. Prerequisite: Biology 10-11 with a grade of C. Three hours of lecture or discussion of assigned readings and one three-hour laboratory per week for one year, plus open laboratory at other times.

8 credit hours

Biology 30-31—Cellular Physiology and Experimental Morphogenesis

This course considers the cell as a unit of function and attempts to relate cellular function to the problems of the development and maintenance of form. It thus brings knowledge of the physiology of the cell to bear upon problems of growth, reproduction, differentiation, and maintenance, utilizing both single and multicellular organisms, and representing both plants and animals.

Emphasis is placed on the delineation of the broad problem areas which current and future research may enlighten. This is accomplished by studying the known physiological correlates of morphogenesis, as well as those numerous areas of both fields between which little or no correlation has yet been developed. Prerequisites: Biology 10-11, Chemistry 10,11 and Physics 22-23. Two lectures or discussions and two three-hour laboratory periods a week for one year.

8 credit hours

Biology 35—Field and Theoretical Ecology

A course which examines living organisms from the point of view of the environment. It includes application of single and holo-centric approaches to evolutionary processes, a study of structure and function as a response to physical and biotic factors, and a study of methods used in classifying organisms, environments, and ecosystems.

Emphasis is placed on the organisms in terrestrial and aquatic habitats on Long Island, so that students may isolate, analyze, and interpret factors controlling their distribution, numbers, and role in one geographical area. At least one ecosystem will be examined and interpreted in detail. The class meets with the instructor for lecture and discussion sessions both in the laboratory and in the field. Prerequisite: Biology 10-11. Six hours per day for six weeks in summer.

6 credit hours

Biology 39—Materials and Methods in Teaching Biology

Designed for prospective secondary school teachers of biology. Emphasizes methods and materials appropriate to the teaching of an experimental science at that level. Topics include an investigation of various curricula, laboratory demonstrations and experiments, and the role of scientific method in teaching. Students are expected to

present typical lessons both in recitation and during laboratory periods. Two discussions and one three-hour laboratory per week.

3 credit hours

Biology 40-41—Integrative Mechanisms and Ethology

The first semester's work in muscular physiology, neurophysiology, endocrinology and sensory physiology focuses upon the physiological mechanisms involved in behavior, and the role they play in coordinating and integrating the activities of the organism. This is followed in the second semester by an examination of the behavioral activities of diverse groups of animals from the ethological (comparative) viewpoint. In the latter study, the evolution of those inherited motor patterns which adapt organisms to their particular environments, and the relationship of such motor behavior to concepts in taxonomy, genetics and ecology, are emphasized. Prerequisite: Biology 30-31. Two hours of lecture and of discussion, and six hours of laboratory per week.

8 credit hours

Biology 43—Animal Behavior

This course deals with such biological problems as the use of species-specific behavior in taxonomy, the ecological adaptiveness and evolution of behavior, the inheritance of specific motor patterns, and hormonal influences on behavior. The development of behavior in individual organisms, as well as the evolution of communication and social behavior in animals, will be treated.

Emphasis will be placed on the ethological approach to the study of animal behavior, which compares the inherited motor patterns in related taxonomic levels, and in which the examination of behavioral phenomena is not confined to a few select laboratory animals but embraces widely divergent groups of animals under natural, or near-natural, conditions. Extensive use is made of films on animal behavior. Two lectures and two three-hour laboratories per week for one semester.

4 credit hours

Biology 44—Invertebrate Zoology

A course that examines the invertebrate phyla from the viewpoint of increasing levels of structural and functional organization. Living materials are used whenever possible to emphasize the dynamic aspects of invertebrate life. A number of important invertebrate types are studied in detail with respect to morphology, development, physiology, behavior, life history, and evolution. Two discussions and two three-hour laboratory sessions per week.

4 credit hours

Biology 45—Vertebrate Zoology

A sequel to Biology 44 that emphasizes the structural and developmental aspects of vertebrate animals in an evolutionary context. Extensive experience with these forms is gained by the detailed dissection of several key representatives of the group. Two discussions and two three-hour laboratory sessions per week.

4 credit hours

Biology 46-47—Physical and Chemical Bases of Biological Systems

A course which considers a series of works dealing with the contributions of the physical sciences to the understanding of biological problems. The course is taught as a seminar, and is an alternative to Biology 10-11 for purposes of fulfilling the biological science requirement for undergraduates. It is especially appropriate for students who have done their major study in the fields of Chemistry and Physics.

Examples of the kinds of works which will be read and discussed by the seminar are books by Oparin, Anfinsen, Szent-Gyorgyi, Blum, Schrödinger, and Wiener.

6 credit hours

Biology 49—Senior Project

In this course the senior biology major works under the supervision of a member of the staff in developing an individual project making use of the knowledge and techniques acquired in previous courses. This work may be in the nature of independent research, an extensive project developing techniques for the preparation and display of biological materials, or an essay dealing with some area of

theoretical importance. The precise work is selected with the advice of the staff member who later directs the project.

Ordinarily the student begins work on this project before or during the first semester of his senior year, and completes it before the end of the year. He is expected to prepare an appropriate report on his project and to present a student seminar. Credit is determined on the basis of the adequacy of the project presented.

2 to 4 credit hours

Division of Humanities

English I—Composition

English I is a first-year course in writing and reading. It gives the student considerable practice in exposition and argument to the end that he may become a competent and habitual critic of his own writing and learn how to make it more effective. It makes use of selections in prose and imaginative literature for analysis of form and style and improvement in reading proficiency.

6 credit hours

Humanities I—Introduction to the Arts

A basic course in music, the visual arts, and imaginative literature. Each of the three arts is studied by analysis of media, formal principles, and styles. The analysis concentrates on individual works and is directed to the discovery and understanding of their qualities as works of art.

6 credit hours

Humanities II—Analysis of Literary Forms

Humanistic disciplines in history, philosophy, and literature are studied through analysis and interpretation of exemplary works in each area. Emphasis is upon what is characteristic of works in a given area and what is individual in each author's treatment. The student examines the assumptions, methods, and purposes of each work as exhibited in its unity and as relevant to selected problems and achievements in a discipline. Authors studied include Thucydides, Gibbon, Sophocles, Shakespeare, Hume, Kant. Prerequisite: Humanities I.

6 credit hours

Humanities III A—Principles of Criticism

Study of the nature of esthetic judgment in selected theories of art, e.g. those of Plato and Hegel. Individual works of art are studied to illustrate the theories. Prerequisite: Humanities II.

3 credit hours

Humanities III B—Practical Criticism

Four variants of the course are offered, each dealing with the application of critical principles to a particular medium or art form. Individual works of art and appropriate critical analyses are studied together. The variants are in Music, Visual Art, Imaginative Literature, and French Literature. Prerequisite: Humanities II.

3 credit hours

Department of English

English 23—The English Language

The course seeks to improve the student's understanding and control of the English language, especially in its spoken form, through practice and through trained observation. The semantic, phonetic, and syntactical aspects of English are studied from the point of view of past history and present usage; throughout, attention is given to the language as the medium both of daily life and of literature.

3 credit hours

English 29—Poetry of the Nineteenth Century

The course introduces the student to the works of the major English poets from Wordsworth and Coleridge to Thomas Hardy. The poems are studied against the background of the social and intellectual tendencies of the time.

3 credit hours

English 30—English Novel

Study of the English novel of the eighteenth and nineteenth centuries. Emphasis is upon comparative analysis of the form and style of novels of the major figures.

3 credit hours

English 31—Contemporary British and American Novel

Study of the novel with respect to its peculiarly modern characteristics. Beginning with Henry James, the course includes such figures as Hemingway, Faulkner, Lawrence, and Forster. Emphasis is upon analysis of the novels.

3 credit hours

English 32—Representative Figures in American Literature I

The course introduces the student to the work of such major writers as Franklin, Emerson, Hawthorne, Melville, Poe, and Lowell. They are seen against the background of their times, and their works are studied as evidence of the varied ways in which American experience and ideas have found expression.

3 credit hours

English 33—Representative Figures in American Literature II

The course is a continuation of English 32 but may be taken separately. It introduces the student to the work of major writers from Walt Whitman and Mark Twain to Robert Frost and Eugene O'Neill.

3 credit hours

English 34—Poetry of the Early Seventeenth Century

A study of the various styles and trends in English poetry, and of its social and intellectual contexts, from the beginning of the century to the Restoration. Special attention will be given Donne, Jonson, Herbert, and Marvell.

3 credit hours

English 35—Dryden, Swift, Pope, and Johnson

The course consists in a study of English neoclassical writing in verse, prose satire, and criticism from the late seventeenth to the late eighteenth centuries. Works to be read include Dryden's verse satires; Swift's *A Tale of a Tub* and *Gulliver's Travels*; Pope's *An Essay on Criticism*, *The Rape of the Lock*, and *The Dunciad*; and Johnson's *Lives of the Poets*.

3 credit hours

English 36—Milton

A critical study of Milton's poetry and selected prose, with attention to the literary, historical, and philosophical backgrounds of the works, and with special reference to *Paradise Lost*.

3 credit hours

English 37—Methods of Instruction in Literature and Composition

An examination of the intellectual grounds on which the teaching of literature and composition in secondary schools rests. The problems involved in communicating genuine literary values to high school students are explored through investigating the reasons for and applications of various methods and materials.

3 credit hours

English 38—Chaucer

The course consists mainly in a study of *The Canterbury Tales* and *Troilus and Criseyde* in the original Middle English. The minor poems and other works get some attention.

3 credit hours

English 39—Shakespeare

Shakespeare's artistic achievement is examined by the analysis of about fifteen of his plays selected to represent the major stages of his development and the major genres in which he wrote. This analysis is supplemented by the study of his life, his times, and the theater for which he wrote. In addition to classroom discussion, records and films of his plays are used, and theater parties are organized to attend Shakespeare productions in the area.

3 credit hours

English 40—Tudor and Stuart Drama

The course covers the period from the beginnings of English secular drama to the closing of the theaters in 1642, studying representative plays from each of the major dramatists (except Shakespeare) and each of the major genres. Prerequisite: English 39 or equivalent.

3 credit hours

English 41—Joyce

Study of the poetry and fiction of James Joyce, including passages from *Finnegans Wake*. Selected works will be carefully analyzed, with the major emphasis upon *Ulysses*.

3 credit hours

English 49—Independent Project

An advanced tutorial culminating in a major essay that permits the student to apply in a rigorous and original manner the disciplines and knowledge he possesses to a restricted topic in English literature. Registration in the course requires the consent of the instructor.

3 credit hours

Department of Foreign Languages

French 10-11—Elementary French

An introductory course having as its major objective the fluent and accurate reading of French texts of moderate difficulty. Secondary emphasis is on the development of oral-aural skills. Special attention is given to general language problems.

6 credit hours

French 20-21—Intermediate French

An intermediate course in the reading and interpretation of French texts. The first semester includes a review of French grammar. Works in various literary forms by representative authors are studied during the year. Secondary emphasis is on the development of oral-aural skills.

6 credit hours

German 10-11—Elementary German

An introductory course having as its major objective the fluent and accurate reading of German texts of moderate difficulty. Secondary emphasis is on the development of oral-aural skills. Special attention is given to general language problems.

6 credit hours

German 20-21—Intermediate German

An intermediate course in the reading and interpretation of German texts. The first semester includes a review of German grammar. Works in various literary forms by representative authors are studied during the year. Secondary emphasis is on the development of oral-aural skills.

6 credit hours

Russian 10-11—Elementary Russian

An introductory course having as its major objective the fluent and accurate reading of Russian texts of moderate difficulty. Secondary emphasis is on the development of oral-aural skills. Special attention is given to general language problems.

6 credit hours

Russian 20-21—Intermediate Russian

An intermediate course in the reading and interpretation of Russian texts. The first semester includes a review of Russian grammar. Works in various literary forms by representative authors are studied during the year. Secondary emphasis is on the development of oral-aural skills.

6 credit hours

French 22-23—Conversation and Composition

A course in the active use of spoken and written French. At least one additional hour per week of work in the language laboratory is required. May be taken concurrently with or following French 20-21. Prerequisite: French 10-11 or equivalent.

6 credit hours

German 22-23—Conversation and Composition

A course in the active use of spoken and written German. At least one additional hour per week of work in the language laboratory is required. May be taken concurrently with or following German 20-21. Prerequisite: German 10-11 or equivalent.

6 credit hours

Russian 22-23—Conversation and Composition

A course in the active use of spoken and written Russian. At least one additional hour per week of work in the language laboratory is required. May be taken concurrently with or following Russian 20-21. Prerequisite: Russian 10-11 or equivalent.

6 credit hours

French 30-31—Major Writers in French

The student analyzes and interprets complete works of a few of the great French writers. The texts are so chosen as to acquaint the student with the outstanding characteristics of French literature; but primary emphasis is on the works themselves. Prerequisite: French 20-21 or equivalent.

6 credit hours

German 30-31—Major Writers in German

The student analyzes and interprets complete works of a few of the great German writers. The texts are so chosen as to acquaint the student with the outstanding characteristics of German literature; but primary emphasis is on the works themselves. Prerequisite: German 20-21 or equivalent.

6 credit hours

Russian 30-31—Major Writers in Russian

The student analyzes and interprets complete works of a few of the great Russian writers. The texts are so chosen as to acquaint the student with the outstanding characteristics of Russian literature; but primary emphasis is on the works themselves. Prerequisite: Russian 20-21 or equivalent.

6 credit hours

French 32-33—Advanced Conversation and Composition

A course intended to develop fluent and correct expression in spoken and written French. At least one additional hour per week in the language laboratory is required. May be taken concurrently with or following French 30-31. Prerequisite: French 22-23.

6 credit hours

German 32-33—Advanced Conversation and Composition

A course intended to develop fluent and correct expression in spoken and written German. At least one additional hour per week in the language laboratory is required. May be taken concurrently with or following German 30-31. Prerequisite: German 22-23.

6 credit hours

Russian 32-33—Advanced Conversation and Composition

A course intended to develop fluent and correct expression in spoken and written Russian. At least one additional hour per week in the language laboratory is required. May be taken concurrently with or following Russian 30-31. Prerequisite: Russian 22-23.

6 credit hours

Foreign Language 39—Methods and Materials in Teaching Foreign Language

A course in the methods and materials used in teaching languages in secondary schools, with special emphasis on applied linguistics. Special attention is given to the language in which the student is concentrating his study.

3 credit hours

Department of Philosophy

Philosophy 23—Ethics

Designed to acquaint the student with the tradition of ethical inquiry and to provide him with some of the intellectual instrumentalities needed to form valid practical judgments. Representative classical works, such as those of Aristotle, Spinoza, Kant and William James, are studied to make clear the character of ethical problems and the principles and methods available for their solution. The scope and applicability of the results of this analysis are tested by considering their relevance to current discussions and problems in the behavioral sciences.

3 credit hours

Philosophy 24—Logic

This first course in logic concentrates on the subject-matter of logic in a strict sense; i.e. as dealing with the treatment of names, propositions, and inferences as these are formulated by various logicians, and as these apply to or are related to various areas of knowledge.

3 credit hours

*Philosophy 30—Major Thinkers in the History of Philosophy:
Ancient and Medieval*

Writings of major thinkers from Plato and Aristotle to such thinkers as Lucretius, Cicero, Augustine, and Aquinas on problems of metaphysics and epistemology. Related problems in other areas are treated when these are an extension or part of the central metaphysical issues.

3 credit hours

Philosophy 31—Major Thinkers in the History of Philosophy: Modern

The writings of the major thinkers from Descartes to Kant on the problems of metaphysics and epistemology. Some attention is given to two or three representative contemporary treatments of these areas.

3 credit hours

Philosophy 33—Aesthetics

Investigates the role of philosophic principles in the treatment of problems concerning beauty and the arts. It focuses on central concepts like expression, imagination, and imitation as these have been variously analyzed by such influential classical and modern thinkers as Plato, Aristotle, Bacon, Hume, Kant, Hegel, Santayana, Croce, and Dewey.

3 credit hours

Philosophy 34—Political Philosophy

This course investigates the function of philosophic principles in political thought and action. It makes use of readings drawn from such authors as Plato, Aristotle, Machiavelli, Spinoza, Hobbes, Locke, Kant, Hegel, Mill, and Dewey.

3 credit hours

Philosophy 35—Philosophy of Science

This course aims to make clear the nature and function of philosophic principles in the natural sciences. It focuses on concepts such as space, time, causality, and life as they are treated in important philosophic and scientific works.

3 credit hours

Philosophy 36—Advanced Logic and Philosophy of Mathematics

This course concentrates on contemporary treatments of logical problems including concepts in the philosophy of science such as truth, proof, etc. It further treats problems in the philosophy of mathematics as these have become merged with those of logic in contemporary philosophies. Prerequisite: Philosophy 24.

3 credit hours

Philosophy 40,41—Analysis of Philosophic Texts

Detailed analysis of a major text in philosophy. The course is designed to acquaint philosophy majors with the fundamental discipline of philosophy as a carefully wrought discursive argument which formulates, investigates, and resolves fundamental problems. Two semesters, two credit hours per semester.

2 credit hours per semester

Philosophy 42,43—Advanced Seminar

This course acquaints majors in philosophy with the broad perspectives of philosophy in a context in which they have a major responsibility for contributing material and subject-matter for discussion. Emphasis is on independent examinations of broad scope covering a wide range of writings unified by a single theme or problem. Two semesters, two credit hours per semester.

2 credit hours per semester

Committee for Interdisciplinary Studies in the Humanities

Humanities 21—Rhetoric

Study of the arts of persuasion constructed by theorists and rhetoricians. Readings are from such sources as Plato, Cicero, Lincoln, and Hovland, Janis and Kelley. Theoretic considerations include the relation of communication skills to subject matter, the role of emotion and reason in persuasion and rhetorical form. Complementary attention is given the practical rules which determine the sources of persuasion.

3 credit hours

Humanities 22—Analysis of Symbols in Literature

An examination of the various symbolic devices exhibited in specific literary works, and a critical evaluation of the problems and principles raised in exemplary analyses of such devices. Readings are from such sources as Plato, Cassirer, I. A. Richards, and Northrop Fry.

3 credit hours

Humanities 30—Varieties of Romanticism

Study of the concept and phenomenon of Romanticism revealed from a variety of sources and perspectives. Readings are drawn from such figures as Diderot, Hegel, Kierkegaard, Nietzsche, Yeats; and Stendhal, Byron, Wordsworth, Kafka, Mann, and Freud.

3 credit hours

Humanities 31—Concepts of Tragedy

Comparative analysis of selected historical, literary, religious, and philosophic texts as embodying various concepts of the tragic. Examples are *The Book of Job* and works of Aeschylus, Plutarch, Shakespeare, Racine, Camus, Uramuno, Toynebee.

3 credit hours

Humanities 32—Cultural History: Renaissance

A study of significant humanistic products of the later 15th and 16th centuries. Materials include art, music, literature, and intellectual achievements of great figures of the age. Emphasis in analysis is on the interrelations of the works as representations of the nature of man and his problems.

3 credit hours

Humanities 33—Concepts of the Comic

Comparative analysis of selected historical, literary, rhetorical and philosophical texts as embodying various concepts of the comic. Examples are Plato's *Symposium*, Dante's *Divine Comedy* and works of Aristophanes, Moliere, Jonson, Chekhov, Fielding, Swift, Twain and Trotsky.

3 credit hours

Humanities 34—Modern Drama Since 1850

A study of the major literary and theatrical developments in European and American drama since 1850 with special emphasis on Ibsen, Strindberg, Shaw and O'Neill.

3 credit hours

Humanities 35 (Music 35)—The Opera

An examination of the musical and dramatic conventions in the development of the opera. Operatic works studied are drawn from such composers as Monteverdi, Gluck, Handel, Mozart, Beethoven, Rossini, Verdi, Wagner, Strauss, Debussy and Berg.

3 credit hours

Humanities 36 (Art 36)—Italian Renaissance Painting

An examination of the major works in Italian painting from 1300 to 1550. Particular emphasis is placed on the works of Giotto, Piero della Francesca, Leonardo and Michelangelo in Florence, and Bellini and Titian in Venice.

3 credit hours

Humanities 48-49—Senior Seminar

Advanced undergraduate study of works which, like Milton's *Paradise Lost* and Beethoven's *Eroica*, span traditional fields. Limited to seniors who are in the Humanities program or who have the consent of the instructor.

6 credit hours

Division of Physical Science and Mathematics

Department of Chemistry

Chemistry 10, 11—General Chemistry

The first year of a two-year sequence preparatory to advanced study in chemistry, designed at the same time to meet the general chemistry requirements of engineering students and others who do not plan to specialize in chemistry. Emphasis is placed on chemical principles, presented in terms of modern theory and in a context of sufficient descriptive subject matter to lend them interpretive value. The historical development of current chemical theory is treated to the extent that it adds meaningful perspective to the discussion. The descriptive facts of chemistry are discussed in terms of and as examples of the principles as they are developed. Carefully selected laboratory experiments are used to illustrate the principles presented and to provide the student with experience in chemistry. Principal topics covered are the states of matter, gas laws, kinetic theory, chemical combination and the atomic theory, chemical equations and stoichiometry, properties of the elements and the periodic table, atomic structure, chemical bonding, oxidation-reduction reactions, solutions, electrolytes, ideal systems at equilibrium, and selected topics in descriptive chemistry. Three lecture hours and four laboratory hours per week.

4 credit hours per semester

Chemistry 20, 21—Quantitative Chemistry

The second course in a two-year sequence preparatory to advanced work in chemistry. Strong emphasis is placed on introductory physical chemistry of aqueous solutions, in coordination with a laboratory program designed to elucidate the principles of chemical equilibrium in solution systems and to develop qualitative and quantitative analytical techniques. Other subjects covered include the correlation of the chemical and physical properties of inorganic species with electronic and stereochemical structure, application of equilibrium principles to the determination of stable species in solution, oxidation potentials, chemical kinetics, mechanisms of inorganic reactions, and nuclear chemistry. Two lecture hours, six laboratory hours per week.

Prerequisite: Grade of C or better in Chemistry 11. Corequisite: Mathematics 20-21 or 22-23.

4 credit hours per semester

Chemistry 30, 31—Organic Chemistry

A systematic discussion of the structure, physical properties and chemical reactions of the main classes of carbon compounds. The electronic and the three-dimensional or stereochemical aspects of representative compounds are first considered. A correlation is then made between structure and reactivity and the essential patterns of behavior of the various classes of compounds are set forth.

Reactions of general synthetic value are given in terms of the detailed mechanisms—ionic, free radical—underlying their overall effect as substitutions, additions and eliminations.

The mutual interactions among several functional groups in more complex molecules are treated using as examples representative compounds from classes of natural products such as carbohydrates, proteins, lipids, vitamins and hormones. Applications to other fields such as petroleum chemistry, polymers and dyes are included. Three lecture hours and four laboratory hours per week. Prerequisite: Grade of C or better in Chemistry 21, or permission of the Chairman, Department of Chemistry.

4 credit hours per semester

Chemistry 32, 33—Physical Chemistry

The mathematical analysis and theoretical interpretation of chemical phenomena. The states of matter, equilibrium, properties of solutions, chemical kinetics, electrolytes and electrochemical phenomena, and molecular structure are the principal topics treated. Strong emphasis is placed upon thermodynamics as a major generalizing theoretical structure. The statistical mechanical basis of thermodynamics is given introductory treatment, and elementary quantum theory is employed in the discussion of molecular structure. In a coordinated laboratory program the principles of physiochemical measurement and the treatment and interpretation of data are learned through performance of selected experiments in which instrumental and other advanced analytical techniques are employed. Three lecture

hours and four laboratory hours per week. Prerequisites: Mathematics 20-21 or 22-23, Physics 10-11 or 22-23, and a grade of C or better in Chemistry 21; or permission of the Chairman, Department of Chemistry.

4 credit hours per semester

Chemistry 39—Materials and Methods in Teaching Chemistry

Designed for prospective secondary school teachers of chemistry. Emphasizes methods and materials appropriate to the teaching of an exact science at the high school level, in the context of the specific field of Chemistry. Prerequisite: Permission of the Chairman, Department of Chemistry.

3 credit hours

Chemistry 40, 41—Experimental Methods of Chemistry

Training in modern experimental techniques of general use in the several fields of chemistry. Through suitable examples, many of which are taken directly from the chemical research literature, the student is acquainted with the instrumentation now in use in research (and in routine laboratory work) in the fields of inorganic, organic and physical chemistry. The approach utilized in obtaining new knowledge in chemistry, and the principles underlying the analysis and determination of the structure of substances, are illustrated. Examples of experimental methods available for application to the course's laboratory program are spectral analysis (ultraviolet and infrared), chromatographic analysis (column, paper, ion-exchange and vapor phase), kinetic measurements, use of isotopically labeled materials, measurements of dipole-moments, pK determinations, resolution of racemic compounds and polarimetry, micro-hydrogenation, electrolytic reductions, reactions in liquid ammonia, photochemical reactions, preparation of derivatives on a semi-micro scale, and ozonization. Two lecture hours and six laboratory hours per week. Prerequisites: Grades of C or better in Chemistry 31 and Chemistry 33, or permission of the Chairman, Department of Chemistry.

4 credit hours per semester

Chemistry 42—Advanced Inorganic Chemistry

Inorganic chemistry will be presented on the basis of the periodic chart of the elements. The physical and chemical properties of the elements will be surveyed in an attempt to rationalize the variations of these properties. For this purpose, physicochemical, thermodynamic, kinetic and chemical bonding concepts will be presented and employed throughout the work of the course. Topics to be covered in broad outline include the chemical elements and the nature of chemical bonding; a survey of binary systems, including alloys, ionic and covalent compounds; inorganic hydrogen compounds; halogen compounds; and coordination complexes. Three lecture hours per week. Prerequisites: Grades of C or better in Chemistry 31 and Chemistry 32.

3 credit hours

Chemistry 43—Advanced Organic Chemistry

An extension of the material introduced in Chemistry 30,31. Organic compounds are discussed in terms of electronic structure and of the stereochemical consequences of electronic structure. The reactions of organic compounds are presented from the point of view of their mechanisms and their preparative value. Structural, mechanistic and synthetic considerations are integrated in a few selected examples from several classes of naturally-occurring substances. Three lecture hours per week. Prerequisite: Grade of C or better in Chemistry 31.

3 credit hours

Chemistry 44—Chemical Thermodynamics

A continuation of the treatment of thermodynamics begun in Chemistry 32, 33. The fundamentals of thermodynamics are developed in a more advanced manner. Particular attention is given to the concept of entropy and the meaning of the Third Law of Thermodynamics. The principles developed are applied to ideal and non-ideal homogeneous and heterogeneous systems. The statistical basis of thermodynamics is developed, including the basic concepts of Maxwell-Boltzmann, Gibbs, Fermi-Dirac and Bose-Einstein statistics. Three lecture hours per week. Prerequisite: Grade of C or better in Chemistry 33.

3 credit hours

Chemistry 45—Advanced Physical Chemistry

An introduction to the methods and theory currently used to investigate and describe atomic and molecular structure. Topics to be covered include introductory wave mechanics, exact and approximate solutions to the Schrodinger equation, applications to the problems of chemical bonding, and atomic and molecular spectroscopy. Three lecture hours per week. Prerequisite: Grade of C or better in Chemistry 33.

3 credit hours

Chemistry 46—Nuclear and Radiochemistry

Topics include the properties of radioactive substances and their use in the study of chemical problems; nuclear structure; a study of nuclear reactions; radioactive decay and growth; interactions of radiation with matter; detection and measurement of radiation, including a discussion of statistics; application of radioactivity to chemical problems such as kinetics, structure, and analysis; artificially produced elements; and chemical phenomena accompanying nuclear reactions. Three lecture hours per week. Prerequisite: Grade of C or better in Chemistry 33.

3 credit hours

Chemistry 48-49—Senior Research

Laboratory work to be carried out under the supervision of a member of the staff of the Department of Chemistry, on a research problem to be selected by the student upon consultation with his staff supervisor. The results of this work are to be incorporated into a senior research report submitted to the Department of Chemistry. Prerequisites: Grades of B or better in Chemistry 30 and Chemistry 33, and permission of the Chairman, Department of Chemistry.

4 credit hours

Department of Mathematics

Mathematics 10-11—Introduction to Mathematical Science

An introduction to the discipline of mathematics emphasizing the role of logic and the use of language. Main subject of the course is the study of number relations, principally of algebraic and trigo-

nometric relations. Analytic geometry is used to picture these relations as sets of points in a plane. The concepts of the derivative and the integral are used to study certain properties of number relations. The real number system is reviewed in the process of showing that it can be described in terms of a few properties from which other properties derive. When time permits, a brief introduction to probability theory is presented to illustrate the contrasts and common elements among mathematical systems with different bases.

6 credit hours

Mathematics 12-13—Introduction to Analysis

An alternative course to Mathematics 10-11 giving more emphasis to the use of mathematics in the physical sciences. The full year is spent on an intensive introduction to the central ideas and techniques of the calculus.

6 credit hours

Mathematics 20-21—Calculus

A systematic study of the calculus based on the beginning made in Mathematics 10-11. The main theme of the course is the study of functions, using the limit derivative and integral. Topics include definition and analysis of exponential functions; inverses; computational theorems for integrals; polynomial approximation of functions as in Taylor's theorem; transformations of the plane and polar coordinate methods; first and second order linear differential equations; and an analytic introduction to surfaces in space. Some experience will be provided throughout in the application of these properties to physical problems. Prerequisite: Grade of C or better in Mathematics 10-11.

6 credit hours

Mathematics 22-23—Intermediate Analysis

A continuing development of the ideas used in Mathematics 12-13, emphasizing those useful in physical problems. Topics include the calculus of functions of several variables; infinite series and expansion of functions; vector calculus; systems of linear equations; special functions; and ordinary and partial differential equations. Prerequisite: Grade of C or better in Mathematics 12-13.

6 credit hours

Mathematics 30-31—Advanced Calculus

Deals with proof of the fundamental theorems of the calculus from the properties of the real number system, and with an extension of the methods of the calculus. The latter includes surfaces and curves in space, multiple and line integrals, vector analysis and the expansion of functions in series. Prerequisite: Mathematics 20-21, and Mathematics 34 concurrently.

6 credit hours

Mathematics 34—Linear Algebra

A study of vector spaces; principally of real vector spaces as a means of formulating and generalizing affine and Euclidean geometry. Topics will include basis relations, subspaces, general linear transformations, inner products and orthogonal transformations. Prerequisite: Mathematics 20 or 22 concurrently.

3 credit hours

Mathematics 35—Algebraic Structures

A study of several of the important types of algebraic systems (groups, rings, fields, and vector spaces). The construction, structure, mappings, and representations of algebraic systems are all given attention. Prerequisite: Mathematics 34.

3 credit hours

Mathematics 37—Probability and Statistics

A course in probability theory emphasizing the testing of hypotheses and attempting to reach significant statistical applications. Topics include the binomial, Poisson and normal distributions; several limit theorems for random variables; the elements of linear bivariate analysis; and selected types of tests and estimates. Prerequisite: Mathematics 20-21 or 22-23.

3 credit hours

Mathematics 39—The Number System

A study of the foundations of elementary mathematics by means of a constructive development of the number system. School instruction in mathematics is examined in the light of our present understanding of the number system. The rational basis for computational

schemes in arithmetic is given particular attention. Prerequisites: Mathematics 20-21.

3 credit hours

Mathematics 42, 43—Advanced Analysis

A course in analysis emphasizing some of the more complex techniques used in applied mathematics. Topics will be chosen from: line and Stieltjes integrals, vector algebra and analysis, series expansions, Fourier analysis, ordinary and partial differential equations, complex function theory. Prerequisites: Mathematics 22-23 or 30-31.

3 credit hours per semester

Mathematics 44—Introduction to Topology

A development of topological structures proceeding from simple axiom systems to metric spaces. Particular emphasis will be put on such concepts as continuity, connectedness, and compactness, chiefly in the context of n -dimensional Euclidean space. Prerequisite: Mathematics 30 or 42.

3 credit hours

Mathematics 46—Topology

A continuation of the study of the most important concepts of point-set topology in general topological spaces. A few of the classical theorems will be proved and preparation will be made for algebraic topology. Prerequisite: Mathematics 44.

3 credit hours

Mathematics 47—Geometry

A course in the foundations of geometry concerned with the development of a geometry from a set of axioms and with relations among finite, projective, affine, Euclidean, and non-Euclidean geometries. Prerequisite: Mathematics 44.

3 credit hours

Mathematics 48—Independent Study in Special Topics

A course of independent study in a topic individually selected from a short list of subjects not substantially treated in the curricu-

lum. Achievement is tested by an examination set at the level of second or third year students. The topic is normally selected in the third year and the examination attempted in the fall of the fourth year. Prerequisite: Admission to a mathematics degree program.

2 credit hours

Mathematics 49—History and Foundations

A seminar course with emphasis on mathematical substance viewed in historical sequence. Student talks and discussions based on extensive reading will be prominent. Topics will range from the significant achievements of Greek mathematics to recent notions about the foundations of mathematics and the present form of some of its classical branches. Prerequisites: Mathematics 30, Mathematics 34, and Mathematics 44.

3 credit hours

Department of Physics

Physics 10-11—General Physics

The first year of a two-year sequence in general physics, designed as a basic course for physics and engineering science students. Topics included in the first year are mechanics, heat and thermodynamics, wave motion, and elementary topics in electricity and magnetism such as interaction of charges, circuit theory, electric and magnetic properties of bulk matter, etc. During the two-year period, use is made of differential and integral calculus, vector algebra, elementary vector calculus and differential equations, which are studied concurrently in mathematics courses. The laboratory program introduces the student to elementary laboratory techniques and provides an opportunity for the observation of the phenomena on which theoretical conceptions have been built. Three lecture hours and one three-hour laboratory per week. Corequisite: Mathematics 12-13.

8 credit hours

Physics 20-21—General Physics

Continues study begun in Physics 10-11. Subjects include electricity and magnetism (leading to the development of Maxwell's

equations), wave motion, acoustics, optics, and topics in modern physics such as special theory of relativity, development of the quantum theory, and atomic and nuclear physics. Three lecture hours and one three-hour laboratory per week. Prerequisite: Grade of C or better in Physics 10-11. Corequisite: Mathematics 22-23.

8 credit hours

Physics 22-23—General Physics

A survey of general physics designed primarily for students in chemistry, mathematics, biology and physical science programs. Emphasis is placed on classical dynamics, electricity and magnetism, and on modern developments in atomic structure. The laboratory is devoted largely to exhibition of phenomena closely related to important physical concepts. Use is made of differential and integral calculus and of vector algebra, but the mathematical development is not as intensive as is that of Physics 10-11, 20-21. Three hours of lecture or recitation and one three-hour laboratory per week. Prerequisite: Grade of C or better in Mathematics 10-11. Corequisite: Mathematics 20-21 or Mathematics 22-23.

8 credit hours

Physics 30-31—Electromagnetic Theory

Designed primarily for physics majors. The field concept is developed in considerably more detail than was done in Physics 20-21 or Physics 22-23. The unification of the elementary forms of the various electromagnetic equations into Maxwell's equations is reviewed. The theory is then applied to the following topics: static electric and magnetic fields, interaction of the fields with bulk matter, circuit theory, fields in resonant cavities, optics, and interaction of charged particles with electromagnetic fields. The special theory of relativity will also be discussed. Three class hours per week. Prerequisite: Physics 20-21 and Mathematics 22-23, each with a grade of C or better. (With the permission of the Chairman, Department of Physics, Mathematics 20-21 may be substituted for Mathematics 22-23, and Physics 22-23 for Physics 20-21.) Corequisite: Mathematics 42-43.

6 credit hours

Physics 32—Mechanics

Designed primarily for physics majors. The Newtonian formulation of classical mechanics will be reviewed and applied to more advanced problems than those considered in Physics 10-11. The Lagrangian and Hamilton methods will then be derived from the Newtonian treatment and applied to various problems. Three class hours per week. Prerequisites: Physics 20-21 and Mathematics 22-23, each with a grade of C or better. (With the permission of the Chairman, Department of Physics, Mathematics 20-21 may be substituted for Mathematics 22-23, and Physics 22-23 for Physics 20-21.) Corequisite: Mathematics 42.

3 credit hours

Physics 33—Statistical Physics

Designed primarily for physics majors. Deals with statistical methods for the description of complex physical systems, the derivation and statistical meaning of the laws and concepts of thermodynamics, and statistical mechanics as applied to gases and solids. Three class hours per week. Prerequisite: Physics 32. Corequisite: Mathematics 43.

3 credit hours

Physics 34-35—Junior Laboratory

Designed primarily for physics majors. This is a laboratory program which takes the whole of classical physics as its province, but which focuses mainly on experiments in electrical measurements, electronics and optics. The class meets for two three-hour laboratory sessions per week for one year. During these sessions, lectures are given as needed. Topics discussed include the theory and applications of electronics (supplementing the discussion in Physics 30-31, which is taken concurrently), laboratory techniques, the experimental method, and elementary theory of errors. Corequisite: Physics 30-31.

4 credit hours

Physics 36-37—Electricity and Magnetism

Designed primarily for students in the physical science program, this course treats the basic phenomena and concepts in electricity and magnetism leading to the formulation of Maxwell's equations. The

course emphasizes application to electric circuits, motors, generators, and electronics. Some work in physical optics is included. Emphasis is on the general understanding of large theoretical concepts in electromagnetism and physical optics, and on applications of basic theory to phenomena and instruments of wide interest. Three lecture-recitation hours and one three-hour laboratory per week. Prerequisites: Physics 22-23 or Physics 20-21; Mathematics 20-21 with Mathematics 30 concurrently, or Mathematics 22-23.

8 credit hours

Physics 38—Astronomy

Designed primarily for students in the physical science program. Includes discussion of descriptive astronomy, the planetary system, and stellar structure and evolution. Emphasis is on the general understanding of the properties of planets and stars, and of the experimental methods by which our knowledge of stellar systems has been obtained. Three class hours per week. Prerequisites: Physics 22-23 or Physics 20-21; Mathematics 20-21 with Mathematics 30 concurrently, or Mathematics 22-23.

3 credit hours

Physics 40-41—Modern Physics

Designed primarily for physics majors. This course covers topics in atomic and molecular structure, solid state physics, relativity, nuclear physics and elementary-particle physics. The phenomena requiring quantum theoretical description are studied, leading to an introduction to quantum mechanics, which is then used as a tool for investigation of other topics. Emphasis is on the development of quantum mechanics and its application in the theoretical analyses of atomic and nuclear phenomena. Three class hours per week. Prerequisites: Physics 30-31, 32, and 33 and Mathematics 42,43.

6 credit hours

Physics 42-43—Methods of Mathematical Physics

This course, designed primarily for physics majors, describes a selection of mathematical techniques useful for advanced work in physics. The methods will be illustrated by application to mechanics, hydrodynamics, heat conduction, electromagnetic theory and quantum

mechanics. Topics will be selected from the following: Linear vector spaces; tensor algebra and vector analysis; matrices; Green's functions; complex variables with application to conformal mapping and contour integration; eigervalue problems and orthogonal functions; partial differential equations; calculus of variations; integral transforms. Prerequisites: Physics 30-31, 32 and Mathematics 42-43; or permission of the Chairman, Department of Physics.

6 credit hours

Physics 44-45—Senior Laboratory

Designed primarily for physics majors. Students duplicate a number of the historical experiments studied in Physics 40-41, but with the aid of modern instrumentation. During the second term, one particular experiment should receive sufficient concentration so that a professionally acceptable description and analysis of the results can be presented. Typical projects involve work in atomic and molecular spectroscopy, X-ray analysis of crystals, the photo-electric effect, measurement of short times and high velocities, particle detection, and radioactivity. The development of experimental technique in the areas of atomic and nuclear physics will be emphasized. The student will be expected to formulate plans for his experiments, based on his reading in journals and textbooks. Two three-hour laboratory sessions per week. Prerequisite: Physics 34-35 or permission of the Chairman, Department of Physics. Corequisite: Physics 40-41.

4 credit hours

Physics 46-47—Modern Physics

Designed primarily for students in the physical science program. The course consists of a survey of recent developments in physics, including introductions to theories of relativity and of quantum mechanics and consideration of the structure and properties of atomic, molecular, and nuclear systems. Other modern developments, such as the nature of solids, low temperature physics and plasma physics, will be discussed briefly. The emphasis is on a general understanding of large theoretical concepts and on applications of basic theory to phenomena of wide interest. Three lecture-recitation hours and one three-hour laboratory per week. Prerequisites: Physics 36-37 and Mathematics 22-23 or Mathematics 30.

8 credit hours

Physical Science 39—Materials and Methods in Teaching Physical Science

Designed for prospective secondary school teachers of physics. Emphasizes methods and materials appropriate to the teaching of an exact science at the high school level, in the context of the specific field of physics. Prerequisites: Physics 22-23 or equivalent, Chemistry 10,11, Mathematics 20-21 or equivalent, and concurrent study of an intermediate course in either chemistry or physics.

Division of Social Sciences

Social Science I—History of Western Civilization

A beginning course in the study of society, emphasizing the structure and development of some major social and economic institutions in selected epochs between the time of Charlemagne and the present. Readings include historical works by Southern, Pirenne, Burckhardt, Dawson, Huizinga, and others. The student is expected to achieve some understanding of the high points in the development of certain crucial Western institutions, to observe the variety of ways in which modern historical scholarship approaches its problems, and to develop some sensitivity to conditions and states of mind of previous epochs.

6 credit hours

Social Science II—Culture, Personality and Social System

A study of society, culture and behavior from an analytic point of view, designed to contrast with the emphasis in Social Science I on institutional organization and development within specific epochs of Western history. Topics taken up are psychological, sociological, economic and political. Materials are largely drawn from the inquiries of social scientists in the recent past, such as Freud, Malinowski, Benedict, Weber, and Lasswell. Emphasis is given to interpretations of behavior which stress structural and dynamic determinants. Prerequisite: Social Science I.

6 credit hours

Social Science 30,31—Topics in the Policy Sciences

Social science viewed from this perspective is concerned with problems of adapting human habits, institutions, and technical resources to given ends, and with problems of defining and appropriately emphasizing the various ideals or purposes which human communities may entertain. Such studies can be expected to eventuate in judgments concerning at least the general requisites for public policy in a given area. Data for such studies will customarily be drawn from history and the other fields of social science. Currently the topic studied is the struggle for power between the Soviet Union and the United States: (a) comparative political economy of U.S.S.R. and U.S.A.;

and (b) the underdeveloped areas, the U.S.S.R. and U.S.A. Prerequisite: Social Science II.

3 credit hours per semester

Social Science 32,33—Topics in the Cultural-Behavioral Sciences

Analyzes the functions, contexts and organization of selected institutions characteristic of complex societies, e.g. law, religion, science, technology, the arts, education, mass media, leisure, fashion, war. Particular emphasis is placed on contrasting evaluations of the contemporary cultural scene, and on the widespread search for cultural identity now being made by individuals and social groups. Prerequisite: Social Science II.

3 credit hours per semester

Social Science 39—Materials and Methods in Teaching Social Studies

Designed for prospective secondary school teachers of social studies. Emphasizes methods and materials appropriate to the teaching of a broad range of subject matter in the social sciences at the high school level. Prerequisite: Permission of the Chairman, Division of Social Sciences.

3 credit hours

Social Science 40,41—Problems and Methods in Social Thought and Social Science

An examination of outstanding theoretical and research achievements in the field. Social Science 40 will emphasize papers and parts of papers in the mode of the policy sciences. Social Science 41 will emphasize papers and parts of papers in the mode of the cultural-behavioral sciences. Prerequisite: May be taken concurrently with Social Science 30,31 and 32,33 or after. Either 40 or 41 may be taken first.

3 credit hours per semester

Department of Economics

Economics 30—Money, Banking, and Monetary Theory

An introduction to modern monetary institutions, their relationship to the economy, and governmental policies in this area. Particular

emphasis will be placed on monetary theory and national income analysis, and their applications to past and present problems. Prerequisite: Social Science II or permission of instructor.

3 credit hours

Economics 31—Business Fluctuations and Fiscal Policy

The measurement and analysis of prosperity and depression. The statistical evidence for the existence of "cycles" is examined. Theories of "cycles" and fluctuations are historically studied and "tested." Prerequisite: Economics 30.

3 credit hours

Economics 32—Principles of Economic Analysis

Economic theory of cost, demand, price, and markets. The application of theory to familiar problems is emphasized. International trade theory is presented as an application. Prerequisite: Social Science II or permission of instructor.

3 credit hours

Economics 33—Monopoly and the American Economy

The significance of the variety of lapses from competition in the modern American economy is related to the problems of public policy in this area. Prerequisite: Economics 32.

3 credit hours

Economics 40-41—Senior Seminar in Economics

The senior seminar will emphasize an examination of current research in the various areas of specialization in economics. In addition to the areas of the core courses, these may include econometrics, economic statistics, international trade, economic development, public finance, labor economics, economic history, and the history of economic thought. The student will be required to prepare a paper demonstrating his acquaintance with and command of basic literature and research techniques.

6 credit hours

Department of History

History 30—The Ancient World

A study of the civilizations of the Orient, Greece and Rome with particular emphasis on the development of the polis (notably Periclean Athens), its decline, and the development of the Alexandrian and Roman empires.

3 credit hours

History 31—The Medieval World

A study of the institutions, mentality and culture of Latin Christendom, Byzantium and Islam.

3 credit hours

History 32—Early Modern Europe

A study of the "waning of the Middle Ages," the Renaissance and Reformation, the emergence of the institutions of the modern state, the political organization of Europe, the secularization of attitudes, and the influence of early modern science.

3 credit hours

History 33—Europe 1775 to the Present

An examination of the character of European society through the study of four or five topics selected to reveal the relationship of dominant intellectual currents to major political, social, and economic developments.

3 credit hours

History 34,35—American History

A study of the development of the contemporary society and polity through a careful analysis of the major historical problems.

3 credit hours per semester

History 36—The Expansion of Europe

A survey of colonialism, imperialism and the development of contemporary institutions such as the British commonwealth, the

United Nations and the Organization of American States; and studies in the relationships between the more and the less developed countries or areas, particularly Africa and Latin America.

3 credit hours

History 37—British History 1760 to the Present

An analysis of the development of the first industrial society, the transformation of society and the reformation of government, together with a review of the mentality of the British and ending with a study of the contemporary society.

3 credit hours

History 38—Russia

A survey of Czarist Russia, the origins and process of the Revolution, and of the development of the Soviet society and polity.

3 credit hours

History 39—Latin America and the West Indies

A study of the Spanish-Portuguese empires, the Latin American nations, and the West Indies: their economies, politics and cultures.

3 credit hours

History 40-41—Senior Seminar in History

Special topics, projects, and research papers.

6 credit hours

Department of Politics

Politics 31—American Political Issues

An exploration of five major policy issues: (1) the Colonies' place in the Empire, 1763-1778; (2) the Constitution; (3) the Hamiltonian Program; (4) slavery, and the position of the Negro; (5) the dislocations resulting from industrialization. These issues are approached through careful examination of original documents with

secondary attention being given to learned interpretation of ideas, institutions, and events. Students are asked to discover: (a) the alternative definitions of what was at issue, and the diverse ways in which facts and principles were used in drawing inferences as to correct policy; (b) the contribution to political discussion of certain philosophic positions; (c) the relations of parties and institutions to doctrines as these developed through time. Prerequisite: Social Science II.

3 credit hours

Politics 32—Political Leadership

Analyzes the nature of political leadership on different socio-political levels and in a number of different historical situations, democratic and non-democratic. Investigates the variables of personality, culture and social organization that influence decision-making, power relationships and successes and failures in leadership. Prerequisite: Social Science II.

3 credit hours

Politics 33—The Political Response to Industrialization, England and Western Europe

A study of the contemporary analyses of and solutions to problems occasioned by the growth and transformation of the factory system and the accompanying social and spiritual dislocations; from 1790 to the present, mainly in England, France and Germany. Prerequisite: Social Science II.

3 credit hours

Politics 34—Political Attitudes and Propaganda

A treatment of the problems of public opinion and factors creating it. The course investigates (1) the content and style of expressions of political attitudes; (2) the political and a-political determinants of interest and participation levels, and political loyalties; (3) the nature, the varieties and actual effects of propaganda. Some attention will also be given to attitude research methods.

3 credit hours

Politics 35—The Political Response to Industrialization, Non-Western Examples

Treats the same problems as Politics 33 but attacks the cases of Russia and India. Prerequisite: Social Science II.

3 credit hours

Politics 40-41—Senior Seminar in Politics

The seminar will consider problems of the democratic community as depicted in the work of four analysts of the contemporary political scene. Each student will then develop an appropriate sub-topic.

6 credit hours

Politics 42—The Concept of Scientific Politics

Examinations of "new" modes of thinking about political affairs as advanced by Machiavelli, Hume, the British analysts, and the proponents of "allocative" systems. Prerequisite: Senior Standing.

3 credit hours

Politics 43—Human Nature and Politics

Examination of the kind of relation thought to hold between man's "nature" and political organization and problems by thinkers giving various definitions to the notion "impulse," "self," and "reason" or "mind": Aristotle, Hegel, Spinoza, Freud, Reid, Mill. Prerequisite: Senior standing.

3 credit hours

Department of Psychology

Psychology 30-31—Introduction to Psychology

An introduction to psychology as a science of behavior. Familiarizes students with major dimensions and modes of behavior: learning, perception, motivation, emotion, personality, personality adjustment. Stress will be placed on currents of contemporary research. Prerequisite: Social Science I and II.

6 credit hours

Department of Sociology-Anthropology

Sociology-Anthropology 20—Human Groups, Organizations, Societies

Investigates the central associative processes and institutions. Stresses theoretical developments and experimental research in the following fields: patterns in formal and informal organizations; "small-group behavior, authority and communication"; the tendency of large organizations to become "total" in their claims; the pressures to integration and anomie.

3 credit hours

Sociology-Anthropology 21—Introduction to Anthropology

Examines the main problems of anthropology: man and culture—human evolution, racial variation, distribution of physical varieties of mankind. The problems of culture: origins of the major elements of civilization; varieties of culture; major cultural areas of the world. Varieties of systems for handling the basic problems of survival, scarcity, order, meaning and integration. Places special emphasis on present-day tribal societies and their main patterns of social organization, with intensive analysis of at least one such society.

3 credit hours

Sociology-Anthropology 32—Social Systems and Community Patterns

A comparative analysis of stratification systems and community structures. Considers systems of ranked social differentiation in large-scale societies; caste and class systems, their various types of organization; the basic functional problems of social differentiation in terms of wealth, power and prestige allocations; open and closed systems, problems of transmission of rank and mobility among strata. Involving a detailed study of present-day America and at least one other modern industrial society with particular reference to psychological factors in the maintenance and perpetuation of strata differences, and the psychological costs of alternative ranking systems. Readings will include basic studies in depth of communities at different levels of development.

3 credit hours

Sociology-Anthropology 34—Social Problems, Conflicts and Movements

Conflict and tensions in modern society. Analysis of the major social problems in large-scale industrialized societies; impact of population changes, shifts in division of labor, urban growth, secularization, mass society trends. Competing value systems and ideologies, and alternative responses to these. Patterned deviations: crime and delinquency, rebellion and apathetic withdrawals; narcotizing devices and their subcultural organization; the special problems of mass media and mass culture. Consideration will also be given to historic and current forms of social movements and patterns of conflict and conflict resolution.

3 credit hours

Sociology-Anthropology 36—Technology, Industrialization, and Social Change

Comparative analysis of the determinants and outcomes of technical developments and accelerated industrial and social change. "Life-history" and case studies of technical innovation and processes of accommodation and acculturation associated with spread of new technologies. Effects of the spread of the enterprise organization and its associated outlooks.

3 credit hours

Sociology-Anthropology 38—Self, Society, Culture and Mental Health

Interpretations of the self, its predicaments, and powers in contemporary society and social science. Current efforts to establish integrated sciences of behavior and culture will be surveyed and assessed. On-going sociological and anthropological research on the determination of mental health profiles will be reviewed and evaluated.

3 credit hours

Sociology-Anthropology 40-41—Senior Seminar in Sociology and Anthropology

Special topics, projects, and research papers.

6 credit hours

*Sociology-Anthropology 42—Research Methods in Sociology-
Anthropology*

An examination of research procedures now in use in the study of culture and society. Emphasis will be placed upon the development of skills in the design, administration and interpretation of a wide variety of research procedures in both sociology and anthropology.

3 credit hours

*Sociology-Anthropology 48—Development of Sociology-
Anthropology to Year 1900*

Begins by investigating the main currents in the development of theories and empirical investigations of society, culture, personality to the year 1860. Proceeds to study the controversies in method and value attending the emergence and efforts at integration of specialized fields of anthropology, cultural history, cultural sociology, structural-functional sociology, and the psychology of group behavior and personality. Authors studied include Tylor, Frazer, Burckhardt, Dilthey, Durkheim, Weber, Simmel, Freud.

3 credit hours

Sociology-Anthropology 49—Sociology and Anthropology Today

Reviews the recent and contemporary advances in research, theory, method in the fields of sociology and anthropology, especially in Great Britain and the U.S. Considers current efforts to evolve a general theory for a unified cultural-behavioral social science. Surveys the unsolved problems within and on the borders of sociology, anthropology, cultural history and social psychology. Finally, explores likely development in the relations among these fields.

3 credit hours

Interdivisional Courses*

Interdivisional Seminar

An investigation of educational theories and institutions designed to help the student integrate his educational experience. The investigation centers on the purposes of knowledge and education, the relations among the sciences and their organization into curricula, and the ways in which knowledge is acquired and transmitted. The first semester considers the history of educational institutions in their relations to social aims and to the development of the sciences. The second semester examines the fundamental presuppositions of educational theories.

6 credit hours

Education 30—Human Development and Behavior

Aims at the organization of students' experiences as individuals and as members of a culture. Emphasizes examination of those bodies of theory which deal with the data of growth, development, learning, and behavior generally. A careful treatment of basic theoretic materials is interwoven with case studies and research reports directly relevant to the problems of the education of the adolescent. The student is further encouraged to relate theory to practice through the application of principles in the re-thinking of his own experience. Audio-visual aids and field work will be arranged at the discretion of the staff. Prerequisites: Social Science I and II.

3 credit hours

Education 40-41—History and Philosophy of Education

Same as Interdivisional Seminar.

6 credit hours

*Courses designed to meet the New York State requirements for certification of secondary school teachers are the responsibility of an interdivisional Committee for the Preparation of Teachers in the College of Arts and Sciences. "Methods" courses in the various disciplines (e.g. *Mathematics 39—The Number System*) are taught by faculties of the departments concerned, and are described with the other courses in those departments.

Education 42—Practice Teaching

Prospective secondary school teachers receive supervised practice in teaching their subjects to high school classes by arrangement with selected Long Island high schools. Frequent consultations with the supervising teacher and twice-weekly seminar meetings with a University faculty member help the student to interpret and evaluate his experience in the classroom.

6 credit hours

Engineering

Engineering 30-31—Mechanics of Solids

An introductory course beginning with a review of the fundamentals of mechanics and the manipulation of vectors. Consideration of plane dynamics and special kinematics and dynamics; fundamentals of elasticity including analysis of stress-strain relations, torsion, strain energy, impact, and theories of failure, etc.

6 credit hours

Engineering 32-33—Fluid Mechanics and Heat Transfer

Properties of fluids, hydrostatic principles, potential flows, one-dimensional gas dynamics, internal and external flows with viscous effects, shock phenomena, fundamentals of heat conduction, heat convection in internal and external flows, fundamentals of thermal radiation, flows with radiation and conduction effects, flows with mass transfer, etc.

6 credit hours

Engineering 34-35—Thermodynamics

Basic concepts of temperature and energy, first law in generalized terms, state equations, kinetic theory, processes, second law, temperature scales, entropy, irreversibility, non-equilibrium states, properties of solids, liquids and gases, chemical thermodynamics, heterogeneous systems, chemical kinetics.

6 credit hours

Engineering 36-37—Electrical Theory

Maxwell's equations of electromagnetic phenomena, static and quasistatic fields, forces between bodies in motion, circuit theory, network analysis and synthesis, transfer functions, stability considerations, active circuit elements, electron tubes and transistor elements, etc.

6 credit hours

Engineering 38—Engineering Measurements

Measurements of fundamental physical quantities, measurement standards, measurement errors, systematic and random errors in experimental data, etc.

2 credit hours

Engineering 40—Engineering Analysis

The solution of engineering problems with emphasis on the unification of scientific principles; study of the steps involved in analysis through the solution of realistic problems, etc.

3 credit hours

Engineering 41—Engineering Synthesis

Study of the principles of combining and applying basic knowledge in several areas to produce a final design, discussion of optimum systems, etc.

3 credit hours

Engineering 42—Properties of Matter

Elementary particles and forces, crystal structures in solid solutions, structure of liquids and polymers, heterogeneous materials and phase equilibria, thermal, electrical and magnetic properties of solids, electronic properties, semiconductions, etc.

3 credit hours

Engineering 44-45—Senior Project

An investigation or design study to be carried out and reported during the senior year under the guidance of a faculty member. The student is encouraged to pursue his own line of investigation.

4 credit hours

Academic Regulations

Regulations affecting students in their academic affairs are briefly outlined in the following pages. Students are responsible for knowledge of all these regulations.

State University reserves the right to change academic regulations or fees at any time, and to cancel any course offered if the number registered does not justify its being continued.

Registration

1. Entering students, whether freshman or transfer, meet with their academic advisers during Orientation Week to plan their class schedules and complete formal registration. Returning students register in the fall after consulting their advisers for final approval of programs planned the previous spring.

2. For the spring semester, only students who must elect courses different from those planned earlier must see their academic advisers during a designated week late in the fall term.

3. Before the close of the spring semester each student receives from the Office of the Dean of Students a list of courses to be offered during the following year, with forms for preliminary registration, and meets with his academic adviser to plan the next year's program.

4. Before the first day of classes in each new semester, each student must pay his fees in the Business Office or make special arrangements with the Dean of Students for deferred payment.

Change of Registration

1. *Change of section:* A change of section, requested because of external circumstances such as transportation or employment problems, requires only the approval of the Dean of Students. A change of section for any other reason requires review by both instructors and approval by the Dean of Students.

2. *Change of course:* A change of course may normally be made only during the first two weeks of a semester. Such a change must be approved by the student's academic adviser and the Dean of Students.

3. *Reduction of course load:* Only under special circumstances and by the action of the Committee on Academic Standing will a student be permitted to reduce his course load below 15 credit hours per semester.

Any student may petition the Committee on Academic Standing for the grade of "W" (Withdrawal) in a course at any time after the first two weeks of classes and prior to the last four weeks of a semester. The Committee may grant such a petition when the withdrawal does not reduce the student's program below 15 credit hours for the semester, or when in the judgment of the Committee unusual circumstances such as physical disability make it impossible for the student to fulfill his academic obligations.

4. *Change of major field:* A change in a student's major field must be reviewed by the two academic advisers involved and must be approved by the Dean of Students.

5. *Procedure:* A student wishing to initiate any change in his registration for sections, courses, or major field begins by obtaining a petition for change from the Office of the Dean of Students. The petition will be directed to the persons who must review and approve the change.

Withdrawal from the University

Any student who finds it necessary to withdraw from State University Long Island Center either permanently or temporarily must file a petition with the Dean of Students. A grade of "W" will be recorded for all courses in which the student is currently registered if he withdraws before the first day of the examination period at the end of the semester.

Students who have withdrawn from the institution and who wish to re-enter must petition the Office of the Dean of Students for re-admission.

Assignment of Grades

1. In a year course (such as Humanities I or Mathematics 10-11) the year's study is viewed as a unit, and a single grade is assigned at the end of the year's work. The comprehensive examination given at the end of the year considers in a reflective way the work of the first semester as well as that of the second semester, and contributes substantially to the course grade. An advisory grade is given

at the completion of the first semester, based on the semester's work and a semester examination. This grade is recorded only for purposes of transferring credit to other institutions if the student withdraws from school without completing the second semester's work.

In semester courses a permanent grade is assigned at the end of the semester's work. The semester is viewed as a unit, and the examination given at the end of the semester contributes substantially to the course grade. In semester courses which are interdependent in subject matter (such as Chemistry 10,11) the satisfactory completion of the first semester course is prerequisite to enrollment in the second semester course.

2. Marks assigned upon completion or termination of a course are as follows:

- A Superior
- B Good
- C Satisfactory
- D Minimum Passing
- F Not Passing (Failure)
- W Withdrawal (See Change of Schedule)

3. The following temporary marks may also be awarded at the end of a semester:

Inc.—Indicates failure to complete assigned work other than the final examination. This mark is not given automatically but only on the request of the student and at the discretion of the instructor.

The time allowed for completion of the work and removal of the *Inc.* mark will be set by the instructor but may be no later than four weeks after the last day of the semester in which the mark was earned. In exceptional circumstances this time may be extended by the Dean of Students with the concurrence of the instructor. Work which is not completed in the prescribed time will be marked "F" by the instructor in determining the final grade.

Abs.—Indicates work incomplete because of absence from the final examination. This mark is automatically awarded by the instructor when the student fails to appear for the final examination.

An absence from a final examination is excusable only by

the Office of the Dean of Students and ordinarily only for physical incapacity.

When the instructor is advised by the Office of the Dean of Students that the absence is not excused, he will then count the student's performance on the final examination as an "F" and compute the final grade for the course accordingly.

Inc.-Abs.—Indicates both of the marks described above apply to the situation.

Academic Standing

Graduation from the Long Island Center requires a scholarship average of C. For the purpose of determining scholarship averages the letter grades have been assigned the following values:

A-4.00, B-3.00, C-2.00, D-1.00, F-0. Grades of *Incomplete* and *Withdrawn* are not included in the scholarship average.

To determine the grade-point average, the number of points for each course is multiplied by the number of credit hours in the course. The total number of points earned in all courses is then divided by the total number of credit hours for which the student has been registered.

Students with cumulative averages at least equal to those indicated below will be in good academic standing:

Completion of freshman year.....	1.75
Completion of sophomore year.....	1.90
Completion of junior year.....	2.00

Students with cumulative averages equal to or greater than 1.50 but less than 1.75 at the end of the freshman year will normally be admitted to the sophomore class on a probationary basis; sophomore to junior 1.75 but less than 1.90; and junior to senior 1.90 but less than 2.00.

A student will normally be suspended if his cumulative average is less than 1.50 at the end of the freshman year; 1.75 at the end of the sophomore year; or 1.90 at the end of the junior year.

Financial Information

Tuition for New York residents in most undergraduate programs is \$325 per year. Tuition for all out-of-state students is \$405 per year. In accordance with State policy there is no tuition for New York residents preparing to be secondary school teachers.

In addition all students will pay the following fees:

	<i>1st</i> <i>Semester</i>	<i>2nd</i> <i>Semester</i>	<i>Per</i> <i>Year</i>
State University Fee	\$25.00	\$25.00	\$50.00
Registration Fee	2.50	2.50	5.00
Student Health Fee	22.50	—	22.50
Student Activities Fee (Approx.)	16.00	16.00	32.00
Freshman ID Card	1.00	—	1.00
Total	\$67.00	\$43.50	\$110.50

Other Fees and Expenses:

Laboratory breakage fee: Every student is required to have a \$5 deposit in the Business Office at all times to cover laboratory breakage. Any balance in this account will be refunded to the student when he graduates or withdraws from State University Long Island Center.

Book cost: Each student should plan to spend between \$75 and \$100 per year for books and laboratory supplies, which may be purchased in the campus bookstore.

Residence charges: Room and board fees for students living on campus range from \$720-740 per year, and are payable on a quarterly basis. A \$25 advance deposit is required, and this amount is applied to the fourth quarter payment. The room deposit is not refundable after the 1st of August. Each resident student pays \$25 per year for linen service.

Late registration: Students who register after the official registration period are required to pay a late registration fee of \$2.

Graduation fee: A graduation fee not in excess of \$15 may be assessed by the senior class upon its members. This fee is normally collected at the time of final registration.

Transcript fee: Two free transcripts will be provided for each student. Each transcript requested thereafter costs \$1.

Tuition Charges On Transfer

Transfer between teacher education programs and other programs may be permitted at any time prior to the student's completion of two full years of academic work. Such transfer after the second full year of academic work is permitted only upon the express approval of the President of the State University of New York, under such conditions as he shall provide.

Any student who transfers from a teacher education program to another undergraduate program must pay the tuition which would have been charged the student had he been enrolled in the latter program during the time he was enrolled in the teacher education program. Such tuition must be paid before the student can be awarded his degree unless arrangements satisfactory to the Dean of Students have been made for payment of the tuition after the student's graduation.

Any student transferring from a non-teacher education program to a teacher education program will receive a refund of tuition equal to the amount that the student has paid while enrolled in the former program, except that out-of-state students do not receive refunds of the added amounts charged to out-of-state residents.

No student transferring from a teacher education program at any time during the four years of undergraduate work to a program of liberal arts, science, mathematics or engineering at another institution shall receive transfer credit for work done at State University Long Island Center except upon payment of tuition which would have been charged the student had he been enrolled in such a program at State University Long Island Center.

Payment of Fees

Students are expected to pay all tuition and fees when due. Unless special arrangements are made, students pay tuition and fees in two installments, one at the beginning of each semester. Resident students are allowed to pay their room and board fees in four install-

ments. Scholarship holders and veterans may not defer their tuition and fees.

In accordance with the Policies of the Board of Trustees all monies due must be paid six weeks prior to the Friday in the last week of classes. Students will not be allowed to take final examinations if any monies are due.

Refunds

A student who withdraws after the first week of any semester is entitled to only a partial refund of monies collected. A schedule of refunds is available in the Business Office.

Scholarships and Loans

Scholarships and veterans' benefits held by State University students may be applied directly to University expenses such as room, board, fees, books and transportation.

Regents' College Scholarships are granted by New York State to high school graduates by counties on the basis of an annual written scholastic competition. Application should be made to the local high school principal.

Scholarships for Children of Deceased or Disabled Veterans, of \$1,800 each, are granted by New York State to eligible applicants on the basis of an annual scholarship examination. Application should be made to the local high school principal or to the State Education Department, Albany, New York.

Veterans may attend State University under the benefits of Public Law 894 (disability) or 550 (Korean War).

Eligible students also may receive financial assistance from the Division of Vocational Rehabilitation of the New York State Education Department.

Many students are partially supported by scholarships administered by high schools, churches, industry and other agencies in their home communities.

The State of New York, through the New York Higher Education Assistance Corporation, enables needy students to borrow money to help finance their higher education. The maximum amount which may be borrowed in any one academic year is \$1,000. The Corporation guarantees loans made by participating New York State banks. Appli-

cation forms for these loans may be secured from the Dean of Students, from a local cooperating bank, or by writing directly to the New York Higher Education Assistance Corporation, State Education Building, Albany, New York.

The United States Government also makes available student loan funds through the National Defense Education Act. Information on these loans, and forms for application, may be obtained from the Dean of Students.

Student Personnel Services and Student Activities

Advisory and Counseling Services

BEGINNING WITH an Orientation Week program for freshmen and transfer students, advising and counseling facilities are always available. Each freshman student is assigned a faculty adviser and upper-classmen are expected to see their respective advisers for approval of their academic programs.

Available to all students is the counseling service of the Dean of Students' office. Individual students may consult with the Dean of Students regarding academic programs or problems, employment, finances, placement or other personal problems.

Student Health Service

Minor medical care is provided through the efforts of a full-time registered nurse and the available services of a physician. A compulsory health insurance program provides for the cost of care of major illnesses or necessary major surgical procedures including hospitalization if necessary. Any student who becomes ill, and whose condition in the opinion of the University's physician requires more close observation than is available during the registered nurse's eight-hour tour of duty, will be referred to his family for care by their private physician at home or in a hospital of their choice. Should they so desire, the student may be admitted to the Community Hospital at Glen Cove by the University's physician.

Athletics

The physical education program is designed to help the student develop competence in athletic activities which are recreational, and which may be played by men and women in the years following graduation.

Intramural leagues play such sports as touch football, volleyball, basketball, tennis, table tennis and softball.

The intercollegiate program for men provides for varsity contests in crew, cross-country, track and basketball.

Student Activities

The student activities program of State University Long Island Center emphasizes extra-curricular experiences of educational value, as well as social or recreational interests.

The Student Polity, of which all students are members, provides a large measure of student self-government in the extra-curriculum. The Polity coordinates activities of the campus student organizations, and sponsors art exhibits, lectures and films on campus.

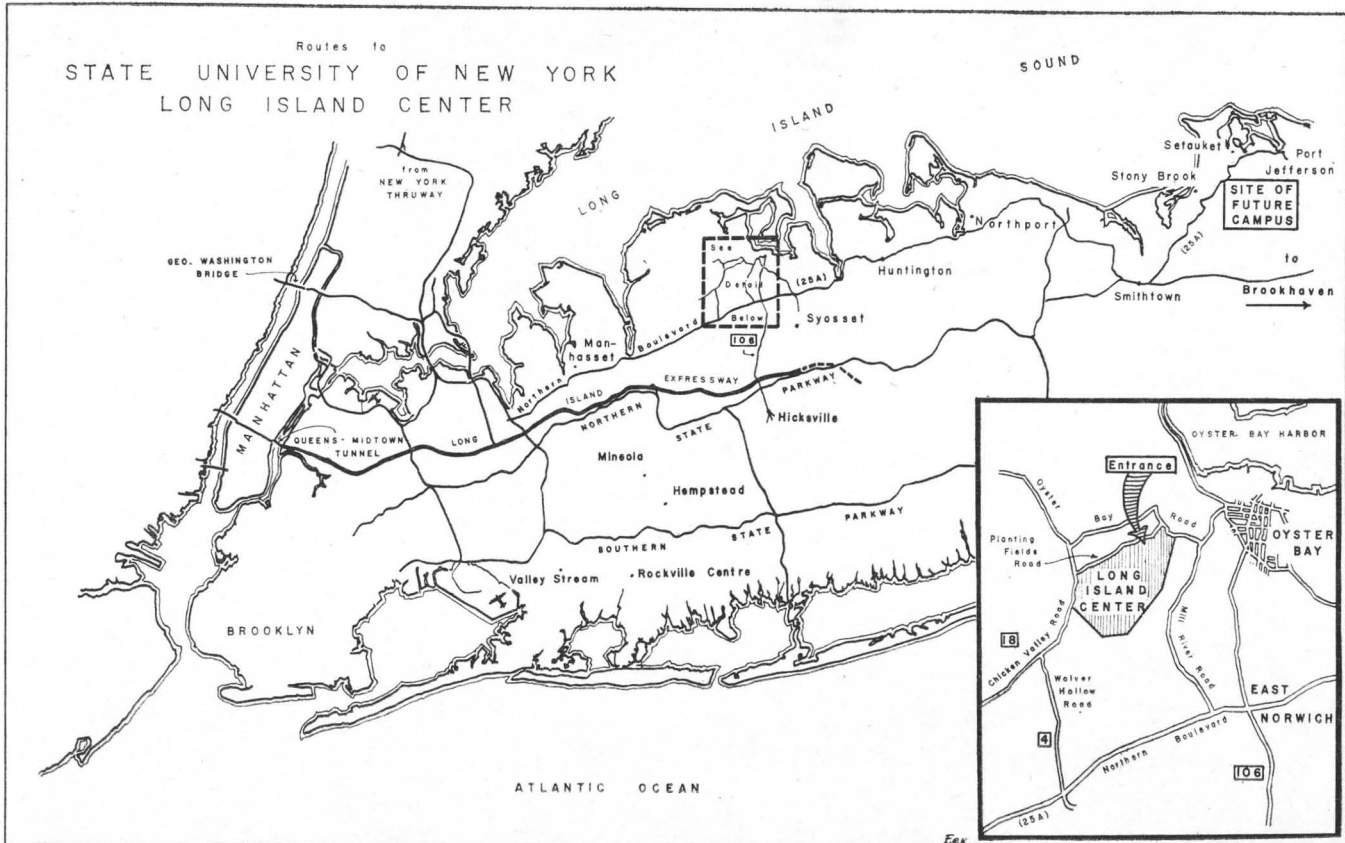
Curtain and Canvas, a student cultural group, arranges field trips to New York City plays, concerts and museums, and brings repertory theater groups to campus for performances. A meteorological society, student religious groups and a bi-weekly student newspaper are among the other active student organizations. Campus dances, picnics and chorus concerts are arranged as student interests suggest.

Notes

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Routes to
STATE UNIVERSITY OF NEW YORK
LONG ISLAND CENTER



Esx

STATE UNIVERSITY OF NEW YORK
Central Administrative Office: Albany 1, N. Y.

Long Island Center at Oyster Bay
Harpur College at Binghamton
Downstate Medical Center in Brooklyn (New York City)
Upstate Medical Center in Syracuse
College of Education at Albany
College of Education at Brockport
College of Education at Buffalo
College of Education at Cortland
College of Education at Fredonia
College of Education at Geneseo
College of Education at New Paltz
College of Education at Oneonta
College of Education at Oswego
College of Education at Plattsburgh
College of Education at Potsdam
College of Forestry at Syracuse University
Maritime College at Fort Schuyler
College of Ceramics at Alfred University
College of Agriculture at Cornell University
College of Home Economics at Cornell University
School of Industrial and Labor Relations at Cornell University
Veterinary College at Cornell University

TWO-YEAR COLLEGES

Agricultural and Technical Institute at Alfred
Agricultural and Technical Institute at Canton
Agricultural and Technical Institute at Cobleskill
Agricultural and Technical Institute at Delhi
Agricultural and Technical Institute at Farmingdale
Agricultural and Technical Institute at Morrisville

COMMUNITY COLLEGES

(Locally-sponsored two-year colleges under the program of State University)

Auburn Community College at Auburn
Bronx Community College at New York City
Broome Technical Community College at Binghamton
Corning Community College at Corning
Dutchess Community College at Poughkeepsie
Erie County Technical Institute at Buffalo
Fashion Institute of Technology at New York City
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Mohawk Valley Technical Institute at Utica
Nassau Community College at Mineola
New York City Community College of Applied Arts and Sciences
Orange County Community College at Middletown
Queensborough Community College at New York City
Rockland Community College at Suffern
Staten Island Community College at New York City
Suffolk Community College at Lake Ronkonkoma
Ulster County Community College
Adirondack Community College
Westchester Community College at Valhalla

