

STATE UNIVERSITY OF NEW YORK
AT STONY BROOK



ABSTRACT OF THE
BULLETIN
1962 - 63

COLLEGE OF ARTS AND SCIENCES
COLLEGE OF ENGINEERING

STATE UNIVERSITY OF NEW YORK

The State University of New York was established by the State Legislature in 1948. It comprises 55 units: three graduate centers, two medical centers, a Graduate School of Public Affairs, twenty-four State colleges (18 four-year and 6 two-year), and 25 locally-sponsored community colleges. Although separated geographically, all are united in the purpose to improve and extend opportunities for youth to continue their education beyond high school.

State University offers programs in the liberal arts and sciences; engineering; home economics; industrial and labor relations; veterinary medicine; ceramics; agriculture; forestry; maritime service; teacher education; law; pharmacy; medicine; dentistry; social work and business administration. The University's two-year programs also include liberal arts study and a wide variety of technical courses in such areas as agriculture, business, and the industrial and medical technologies.

Advanced graduate study at the doctoral level is offered by the University at 12 of its units, including the Graduate Centers and the Graduate School of Public Affairs. While graduate work can be pursued at 23 of the colleges, the programs at the majority of these units are now limited to the master's level. The University, however, is continuing to broaden and expand overall opportunities for advanced degree study.

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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CONTENTS

Council	7
Administration	8
Faculty	9
General Information	26
Admissions	28
Academic Standing	33
Financial Information	34
Student Personnel Services and Student Activities	40
Academic Programs	42
Courses of Instruction in the College of Arts and Sciences	47
Biological Sciences	49
Chemistry	51
Economics	53
Education	55
English	60
Fine Arts	63
Art	63
Music	65
Theatre Arts	66
Foreign Languages	67
French	68
German	69
Russian	70
Spanish	70
History	71
Interdepartmental Courses in the Humanities	73
Mathematics	74
Philosophy	76
Interdepartmental Courses in Physical Science	78
Physics	80
Political Science	83
Psychology	85
Interdepartmental Courses in the Social Sciences	87
Sociology-Anthropology	88
The College of Engineering	91
Graduate Courses	100
Maps	

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FACULTY

Nandor Balazs

Professor of Physics

M.A., Scientific University of Budapest, 1948

Ph.D., University of Amsterdam, 1951

William Dickson Barcus, Jr.

Associate Professor of Mathematics

S.B., Massachusetts Institute of Technology, 1950

Ph.D., Oxford University, 1955

Edwin H. Battley

Associate Professor of Biology

B.A., Harvard College, 1949

M.S., Florida State University, 1950

Ph.D., Stanford University, 1956

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Associate Professor of Music

B. Music, Syracuse University, 1949

M. Music, Northwestern University, 1950

Ruth Blackburn

Assistant Professor of English

B.A., Kings College, University of London, 1939

M.A., University of Chicago, 1942

B.D., Yale University, 1945

Ph.D., Columbia University, 1947

Francis T. Bonner

Professor of Chemistry

Chairman, Department of Chemistry

B.A., University of Utah, 1942

M.S., Yale University, 1944

Ph.D., Yale University, 1945

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Professor of Engineering
Chairman of the Department of Thermal Sciences

B.S., Purdue University, 1941
M.S., California Institute of Technology, 1945
A.E., University of Michigan, 1949
Ph.D., University of Minnesota, 1957

Morris E. Bram
Instructor in Mathematics

B.S., City College of New York, 1960

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M.S., 1959; Ph.D., 1960

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Associate Professor of Engineering

B.S., Oregon State College, 1955
M.S., Purdue University, 1956
Ph.D., University of Pittsburgh, 1959

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B.A., West Virginia University, 1949
M.A., University of Pittsburgh, 1952
Ph.D., Western Reserve University, 1957

Elizabeth Coleman
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M.A., Cornell University, 1959

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Ph.D., Harvard University, 1954

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M.A., Columbia University, 1962

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M.C.E., New York University, 1955
Eng.Sc.D., Columbia University, 1961

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B.S., University of Pittsburgh, 1943
Ph.D., Cornell University, 1950

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Professor of Biology
Chairman, Department of Biological Sciences
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Special Assistant to the President
A.B., Antioch College, 1940
A.M., Wesleyan University, 1941
Ph.D., Yale University, 1951

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Professor of Engineering
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SM in CE., Mass. Inst. of Technology, 1951; ScD., 1957

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Professor of Foreign Languages
Chairman, Department of Foreign Languages
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B.S., City College of New York, 1931
M.A., Columbia University, 1932; Ph.D., 1947

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B.A., State University of Iowa, 1949;
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Ph.D., University of Illinois, 1948

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E.S., in S.S., City College of New York, 1947

M.A., Columbia University, 1949

Ph.D., New School for Social Research, 1955

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B.A. Sc., University of British Columbia, 1948;

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Ph.D., Princeton University, 1959

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E.S., Case Institute of Technology (Cleveland), 1951

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Ph.D., University of Chicago, 1957

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B.E., University of Queensland, Australia, 1955

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Ph.D., Johns Hopkins University, 1960

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B.A., University of Notre Dame, 1944
M.A., University of Minnesota, 1947
Ph.D., Harvard University, 1959

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B.S., University of Omaha, 1950
M.A., University of Chicago, 1952; Ph.D., 1956

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A.B., Princeton University, 1947; A.M., 1949; Ph.D., 1953

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B.S., Bates College, 1947
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B.S.M.E., University of Tennessee, 1954
M.S.M.E., Northwestern University, 1956; Ph.D., 1958

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Assistant Professor of Chemistry
B.S., Massachusetts Institute of Technology, 1958
Ph.D., University of California at Berkeley, 1962

Judah L. Stampfer
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B.A., University of Chicago, 1943; M.A., 1944
M.A., in Education, Columbia University, 1947
Ph.D., Harvard University, 1959

Norman Stein
Associate Professor of Mathematics
E.A., Cornell University, 1954; Ph.D., 1957

Robert Sternfeld
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A.B., University of Illinois, 1938
A.M., University of Chicago, 1939; Ph.D., 1948

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M.S., Boston University, 1953

Sei Sujishi
Professor of Chemistry
E.S., Wayne State University, 1946; M.S., 1948
Ph.D., Purdue University, 1949

Clifford E. Swartz
Associate Professor of Physics
A.B., University of Rochester, 1945; M.S., 1946;
Ph.D., 1951

Joy Talsma
Instructor in Biology
B.S., Creighton University, 1958
M.A., University of California at Berkeley, 1960

Martin B. Travis
Professor of Political Science
Acting Chairman, Department of Political Science
A.B., Amherst, 1939
M.A., Fletcher School of Law and Diplomacy, 1940
Ph.D., University of Chicago, 1948

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Associate Professor of Biology
Deputy Chairman, Department of Biological Sciences
B.A., University of Wisconsin, 1942
M.A., Columbia University, 1952; Ph.D., 1959

Eugenia Vassylkivsky
Instructor in Foreign Languages
B.S., Columbia University, 1954; M.A., 1958

A. Henry Von Mechow
Assistant Professor of Physical Education
B.S., Cortland State Teachers College, 1949
M.S., College of Education at Cortland, 1957

William Walsh
Instructor in English
B.A., St. John's University, 1956
M.A., Catholic University, 1958

Walter Watson
Associate Professor of Philosophy
Ph.B., University of Chicago, 1943; Ph.D., 1958

Renkt Wennberg
Assistant Professor of Foreign Languages
Filosofie Kandidat, Uppsala University, 1951
M.A., Bryn Mawr, 1953
Ph.D., University of Pennsylvania, 1956

Robert W. White
Instructor in Fine Arts
Diploma, Rhode Island School of Design, 1942
Fellow, American Academy in Rome, 1961, 1962

Allan K. Wildman

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B.A., University of Michigan, 1950

B.D., University of Chicago, 1955; Ph.D., 1962

George C. Williams

Associate Professor of Biology

A.B., University of California at Berkeley, 1949

M.A., University of California at Los Angeles, 1952;

Ph.D., 1955

Jay C. Williams, Jr.

Professor of Political Science

A.B., University of Chicago, 1935; A.M., 1942;

Ph.D., 1955

Armen H. Zemanian

Professor of Engineering

B.E.E., City College of New York, 1947

M.E.E., New York University, 1949; Sc.D., 1953

Harold Zyskind

Professor of Philosophy

M.A., University of Chicago, 1947

*on leave September 1, 1962 to August 31, 1963.

GENERAL INFORMATION

Stony Brook Campus

The permanent campus of the State University at Stony Brook is situated in a wooded and hilly region of the north shore on four hundred and eighty acres of land donated to the State of New York by Ward Melville. The region, which is commonly known as the Three Village area from the associated villages of Stony Brook, Setauket, and Old Field, is rich in historic landmarks and cultural facilities. Churches and stores are conveniently situated in Stony Brook and East Setauket.

Plans for the new campus were first made in 1959 and actual preparation of the site began the next year. As the academic year 1962-63 opened the following buildings were available for use: a dormitory and dining hall to accommodate six hundred sixteen students, the Humanities building, the Chemistry building, and a group of service buildings. For the most part, engineering and the various science departments will at first share the use of the Chemistry building, and the other departments will share the use of the Humanities building. By the beginning of the academic year 1963-64 the Library, the Biology, and Physics buildings in addition to two dormitories and a dining hall are expected to be ready. The Engineering building and the Health and Physical Education building are scheduled for completion by January, 1964.

Designs have been approved for an Administration building, a Student Union building and an infirmary. In the planning stage are a Social Science building, a Graduate Engineering building, an Earth Science building, a Fine Arts center, and additional dormitories.

Library

At this time the library collections, which are housed in temporary quarters, total more than 60,000 catalogued volumes. New acquisitions are being added at the rate of 1,500 a month and even this growth will be accelerated in September 1963, when the library moves into its new building.

The library has concentrated on the acquisition of primary sources, monographs, and journal files that will furnish the live and current materials needed in undergraduate and graduate programs. In this respect the library also purchases rare books and collections and is occasionally the recipient of significant gifts.

In addition, it subscribes to more than 1,500 periodicals. Facilities for microfilm and microprint reading are available; the microfilm collection runs to more than 2,500 reels. For making reproductions the library has thermocopying machines and a microfilm reader-printer. There are approximately 1,000 long-playing phonograph records in the music collection.

The library building now under construction will seat 750 readers and house 350,000 volumes; there are plans for an annex that will provide space for an additional 600,000 volumes. The new building is being equipped as an open-stack library, with carrels, study rooms, projection and music rooms, and areas for special materials. It will offer a maximum of free access to the collections, together with a maximum of privacy, by scattering small seating areas throughout the stacks. With its accelerating growth and attractive new quarters the library will be the intellectual as well as the physical center of the new campus.

ADMISSICNS

Admission to Undergraduate Study

Undergraduate admission to the State University of New York at Stony Brook is open to men and women of serious intellectual purpose who have demonstrated academic competence in their prior schooling and who are prepared to continue their studies on a full time basis. The selection of candidates for admission is based on academic qualifications and personal achievement without regard to race, color, creed, or national origin. New students enter the university only in the fall term.

The selection of candidates for admission to the university involves a careful analysis of the applicant's ability to perform the intellectual tasks necessary to satisfactorily complete the university curriculum he has selected. Emphasis is placed upon the selection of candidates who will make the most effective use of the educational opportunities available at the State University at Stony Brook.

Since the means by which a student may develop academic competence and intellectual ability are so numerous, both within and outside the context of formal instruction, no single pattern of secondary school preparation is mandatory, and no arbitrary criteria for admission based upon secondary school academic average or rank in class have been established.

The university graduation requirements listed on pages 42 - 46 of the bulletin may provide a meaningful standard against which the applicant can measure his own preparation in terms of the performance which will be expected of him at the State University at Stony Brook. These requirements imply a broad pattern of preparation in humanities, science, and mathematics, in which the student has

obtained not only general notions of culture but also skill in the use of verbal, scientific and mathematical concepts.

Final acceptance is based upon satisfactory completion of the secondary school program and the receipt of an acceptable medical report.

Application Procedure for New Freshmen

To be considered for admission, candidates must file an application which may be secured from the Admissions Office, State University of New York at Stony Brook, Stony Brook, New York.

A pamphlet, "How to Apply for Admission," giving complete application instructions, is included with each set of application forms. The applicant is responsible for following the procedure outlined in this pamphlet to make certain that his application is properly completed.

Entrance Examination

Applicants for admission must take the entrance examinations described in "How to Apply for Admission". Candidates are urged to complete this requirement as early in the application process as possible.

Although the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board is not required for admission, all applicants who sit for this examination are urged to have the results forwarded to the Admissions Office.

Candidates who reside out of state and are unable to take the regularly scheduled State University Entrance Examination may request permission to substitute the CEEB, ACT or other recognized entrance examination. Such requests must be made in writing to the Director of Admissions at as early a date as possible.

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 the State University at Stony Brook normally are mailed 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 at Stony Brook.

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 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

Unmarried students who will not live at home during the school year are required to live in university residence halls. In 1963-64 housing for approximately 1200 men and women will be available on the Stony Brook campus. All rooms provide for double occupancy and include a bed, mattress, bureau, study desk and chair, lamp and closet for each student.

Board consisting of 21 meals per week is purchased by resident students each semester. Non-resident students may purchase meals in the university dining hall.

Additional Information

Additional information may be obtained by writing to the Office of Admissions, State University of New York at Stony Brook, Stony Brook, New York.

Appointments for interviews may be made by mail or by telephone: (516) 246 - 5126-27-28. Appointments may be made between 10:00 a.m. and 4:00 p.m., Monday through Friday.

ACADEMIC STANDING

Graduation from the State University at Stony Brook 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 Inccomplete and Withdrawn are not included in the scholastic 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 out-of-state students enrolled in Science, Mathematics, and Engineering is \$405 per year. For those out-of-state students enrolled in teacher training tuition is \$300. 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:

	1st Semester	2nd Semester	Per Year
State University Fee	\$25.00	\$25.00	\$ 50.00
Student Health and Accident Insurance	22.50	-	22.50
Student Activities Fee (Approx.)	16.00	16.00	32.00 (not to exceed \$50)
	-----	-----	-----
	\$63.50	\$41.00	\$104.50

Other Fees and Expenses:

Matriculation or Admission fee: A one-time charge of \$5.00 must be paid by each newly admitted or matriculating student.

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 charges for students living at the Stony Brook campus will be approximately \$815-830 per year, payable on a quarterly basis. A \$25 advance deposit is required, and this amount is applied to the first quarter payment. The room deposit is not refundable after June 30. Each resident student pays approximately \$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 \$2.00.

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: Transcripts will cost \$1.00 each. However, two free transcripts will be provided for each student who graduates.

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 at Stony Brook except upon payment of tuition which would have been charged the student had he been enrolled in such a program at State University of New York at Stony Brook.

Payment of Fees

Students are expected to pay all tuition and fees when due. Unless special arrangements are made with the University Business Officer, 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 installments. Scholarship holders and veterans may not defer their tuition and fees.

Refunds

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

Scholarships and Loans

When approved by the Business Officer of the University, 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.

Information for Applicants for Scholar Incentive Awards

Eligibility: Beginning with the spring semester of 1962, any person matriculated in a college in New York State in a full-time program leading to a degree was entitled to a Scholar Incentive Award for each semester of attendance if he has been a resident of New York State for the preceding year and meets the prescribed academic requirements. (An undergraduate who is a legal resident but has not been a resident for a full year may qualify for an award if he was a resident during his last year of high school attendance. Similarly, a graduate student may qualify if he was a resident from the beginning of his last year of college attendance until the time he matriculated for graduate study.) However, a Scholar Incentive Award cannot be received for professional study in theology or for a specific program for religious aspirants or leading to a divinity or religious education degree.

Amount of Award: The amount of the Scholar Incentive Award will be based on the net taxable balance of your income,

and those responsible for your support, as reported on the New York State income tax return for the calendar year. (If more than one child in the family is attending college, the net taxable balance is divided by the number of children attending college.) The maximum award for the two semesters (Fall and Spring) was established as follows:

Net Taxable Balance	Under graduate Study	First Year of Graduate or Professional Study	Graduate or Professional Study Beyond First Year
\$1,800 or less	\$150	\$200	\$400
Between \$1,800 and \$7,500	100	150	300
\$7,500 or more	50	100	200

As soon as practicable, scholar incentive holders and the colleges will receive a notice of the maximum award to which the holder will be entitled solely on the basis of financial status. However, the amount of award cannot exceed the amount by which the college tuition for the semester (not including fees) exceeds \$100.

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. Application 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.

* The tuition as listed on page 34 is correct for the academic year 1962-63. A new schedule, in accordance with the State University uniform tuition plan, will be announced in the 1963-64 catalog.

STUDENT PERSONNEL SERVICE AND STUDENT ACTIVITIES

Advisory and Counseling Services

Beginning with an Orientation program for new students prior to registration advising and counselling facilities are available to all undergraduates. A faculty adviser is assigned to each student. Students are encouraged to consult their advisers regarding educational planning and any academic problems arising during the school year.

The Dean of Students Office consists of a staff of trained counsellors experienced in helping students with personal, social, educational and vocational problems. In addition to a general counselling service the Dean of Students Office also supervises the following:

Placement Service

Information on student employment and assistance in securing full time non-teaching positions is provided through the Dean of Students Office. Information on teaching positions is available through the Department of Education.

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 Univer-

sity's physician requires more close observation than is available, will be referred to his family for care by their private physician at home or in a hospital of their choice.

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 which include publications and special interest organizations, and sponsors art exhibits, lectures and films on campus.

A complete description of student activities can be found in the Student Handbook.

ACADEMIC PROGRAMS

The State University of New York at Stony Brook has been authorized to award the degrees of Bachelor of Arts, Bachelor of Science, Bachelor of Engineering Science, Master of Arts, Master of Science, and Doctor of Philosophy.

Graduate Degree Programs

During the academic year 1962-63 graduate programs in the fields of engineering (thermal sciences and fluid mechanics), chemistry, and physics were initiated. Departments throughout the University will, at varying dates, introduce graduate work leading to advanced degrees. For further information see the separate Graduate School Bulletin. (Inquiry should be addressed to the Graduate School Office of the State University of New York at Stony Brook.)

Undergraduate Degree Programs

In the College of Arts and Sciences, the degree of Bachelor of Arts is offered with a major in Economics, English, the Fine Arts (music or art), Foreign Languages, History, Philosophy, Political Science, Psychology, or Sociology-Anthropology; the degree of Bachelor of Science is offered with a major in the Biological Sciences, Chemistry, Mathematics, Physical Sciences or Physics. The College of Engineering offers a program leading to the degree of Bachelor of Engineering Science (the requirements for which are listed below, page 93).

The University requires each candidate for an undergraduate degree to earn a minimum of 120 hours of credit in courses approved for his program by an academic adviser.

I. Requirements for the Bachelor of Arts

1. All candidates for this degree must satisfy the following requirements, normally by attaining a passing grade in appropriate courses, and exceptionally by being granted an exemption:

- a. English 101-102 6 hours
- b. Humanities 101,102 and 151-152 12 hours
- c. Social Science 101-102 and 151-152 12 hours
- d. Two years of work in the areas of mathematics and science (biology, chemistry, physics), with one of the years in a course that includes a laboratory, and with no more than one year of work in a single department. 12-16 hours
- e. One additional year of elective work outside the area in which the student's field of concentration is located. (The area of Humanities includes English, Fine Arts, Foreign Languages, and Philosophy; the area of Social Science includes Economics, History Political Science, and Sociology-Anthropology. However, students working in either area are strongly urged, in the satisfying of this requirement, to choose an elective in the departments of mathematics or physical or biological sciences). 6-8 hours

2. Foreign Languages. Each candidate is required before graduation to demonstrate a two-year level of achievement in the foreign language approved for his program. This achievement may be demonstrated either by (a) passing a proficiency examination upon admission to this institution or (b) satisfactorily completing a course numbered 211,212 in the foreign language approved for his program. Proficiency is thus the level of achievement normally attained after approximately two years of college study in the foreign language.

3. Every candidate must meet the requirements of one of the departmental programs of concentration.

4. Every student admitted without advanced standing must in his first year take English 101-102, Humanities 101,102, Social Science 101-102, one year of mathematics or a biological or physical science, and one elective, which it is strongly recommended should be a foreign language.

5. A student may be exempted from any of the course requirements on the recommendation of the agency supervising the course.

6. A cumulative grade-point average of 2.0 for all courses in his program is expected of every candidate for the degree.

II. Requirements for the Bachelor of Science

1. Credit for or exemption from the following course requirements is expected of all candidates for the degree:

- | | |
|--|-----------|
| a. English 101-102 | 6 hours |
| b. Humanities 101,102 and 151-152 | 12 hours |
| c. Social Science 101-102 and 151-152 | 12 hours |
| d. A one-year course in mathematics | 6 hours |
| e. One year of course work in physical or biological sciences outside the major department. | 6-8 hours |
| f. One year of additional course work outside the major department. (Students are strongly urged to select courses in the areas of the Humanities or Social Sciences in meeting this requirement.) | 6-8 hours |

2. Foreign Languages: Each candidate is required before graduation to demonstrate a two-year level of achievement in the foreign language approved for his program. This achievement may be demonstrated either by (a) passing a proficiency examination upon admission to this institution or (b) satisfactorily completing a course numbered 211,212 in the foreign language approved for his program. Proficiency is thus the level of achievement normally attained after approximately two years of college study in the foreign language. Each student concentrating in the biological sciences, a physical science or mathematics should consult the statement of degree requirements for his major field to ascertain the language that may be approved for his program.

3. Every student must meet the requirements of one of the departmental programs of concentration or of the Physical Science program.

4. Every student admitted without advanced standing must take in his first year English 101-102, Humanities 101,102, Social Science 101-102, one-year course in mathematics, and one-year course in science. Under special circumstances and with the consent of an adviser, students may register for two science courses and defer either Humanities 101,102 or Social Science 101-102 for one year.

5. A student may be exempted without credit from any of the course requirements on the recommendation of the agency supervising the course.

6. A cumulative grade point average of 2.0 for all courses in his program is expected of every candidate for the degree.

III. Teacher Certification: Students intending 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. Students desiring certification for teaching secondary schools must take at least 18 credit hours in education, including courses in 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. The State of New York now requires those seeking teacher certification in the sciences to have a course in the earth sciences.

COURSES OF INSTRUCTION IN THE COLLEGE OF ARTS AND SCIENCES

The courses, listed by departments, are designated by a system of abbreviations and numbers as well as by titles. The key to the abbreviations is the following:

BIO - Biological Sciences
CHE - Chemistry
ECO - Economics
EDU - Education
EGL - English
FAS - Fine Arts
 FAA - Art
 FAM - Music
 FTH - Theatre
FLA - Foreign Languages
 FLF - French
 FLG - German
 FLR - Russian
 FLS - Spanish
HIS - History
HUM - Humanities
MAT - Mathematics
PCL - Political Science
PHI - Philosophy
PHY - Physics
PSY - Psychology
SAN - Sociology-Anthropology
SSC - Social Science

The numbers (with 101-399 used for undergraduate courses, and 401-499 reserved for graduate courses) will indicate the level at which the offering would normally be taken. Courses ordinarily given in the Fall are assigned an odd number, and those given in the Spring an even number. Year courses are of two types, divisible and indivisible. The indivisible course, of which both halves must be taken or no credit is allowed, and in which a single grade for the entire year is given at the end of the second semester, is designated by two numbers separated by a hyphen, as MAT 111-112. A divisible course, of which the first semester is a prerequisite for continuing, but in which credit can be earned for completing the first semester alone, is designated by two numbers separated by a comma, as CHE 101,102.

DEPARTMENT OF BIOLOGICAL SCIENCES

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

A. Studies in area of concentration

- Biology 101-102 (Introduction to Biological Science)
- Biology 151-152 (Cytology, Genetics and Evolution)
- Biology 201-202 (Cellular Physiology and Experimental Morphogenesis)
- Biology 235 (Field and Theoretical Ecology)
- Biology 341-342 (Integrative Mechanisms and Ethology)
- Biology 391-392 (Senior Project)

B. Studies in related fields

- Chemistry 101,102 (General Chemistry)
- Physics 161,162 (General Physics)
- Mathematics 111-112 (Introduction to Mathematical Science)
- Mathematics 151-152 (Calculus)
- Foreign Language (Biology majors are required to show proficiency in French, German, or Russian)

Courses in Biological Sciences

BIO 101-102--Introduction to Biological Science
8 credit hours

BIO 151-152--Cytology, Genetics and Evolution
8 credit hours

BIO 201-202--Cellular Physiology and Experimental Morphogenesis	8 credit hours
BIO 235--Field and Theoretical Ecology	6 credit hours
BIO 239--Materials and Methods in Teaching Biology	3 credit hours
BIO 241--Microbiology	4 credit hours
BIO 245--Form and Function in Higher Plants	4 credit hours
BIO 255--Current Topics in Biology	1 credit hour each semester
BIO 341-342--Integrative Mechanisms and Ethology	8 credit hours
BIO 348--Invertebrate Zoology	4 credit hours
BIO 349--Vertebrate Zoology	4 credit hours
BIO 351-352--Physical and Chemical Bases of Biological Systems	6 credit hours
BIO 391-392--Senior Project	2 to 4 credit hours

DEPARTMENT OF CHEMISTRY

Bachelor of Science in Chemistry*

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

A. Studies in area of concentration

Chemistry 101,102--General Chemistry
Chemistry 151,152--Quantitative Chemistry
Chemistry 201,202--Organic Chemistry
Chemistry 235,236--Physical Chemistry
Chemistry 251--Physical Chemistry Laboratory
Chemistry 301--Experimental Methods of Chemistry
Chemistry 305--Intermediate Inorganic Chemistry

B. Studies in related areas:

Mathematics 113-114 (Analysis) and 155-156 (Intermediate Analysis)
Physics: at least three semesters required
Foreign Language: proficiency requirement must be met in German

*----- Students seeking teacher certification may be able to complete the undergraduate program in chemistry 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 chemistry are advised to consider the program leading to the Bachelor of Science in Physical Science.

Courses in Chemistry

CHE 101,102--General Chemistry	8 credit hours (4 credit hours per semester)
CHE 151,152--Quantitative Chemistry	8 credit hours (4 credit hours per semester)
CHE 201,202--Organic Chemistry	8 credit hours (4 credit hours per semester)
CHE 235,236--Physical Chemistry	6 credit hours (3 credit hours per semester)
CHE 251--Physical Chemistry Laboratory	3 credit hours
CHE 301--Experimental Methods of Chemistry, I	4 credit hours
CHE 302--Experimental Methods of Chemistry, II	4 credit hours
CHE 305--Intermediate Inorganic Chemistry	3 credit hours
CHE 315--Intermediate Organic Chemistry	3 credit hours
CHE 325--Intermediate Physical Chemistry	3 credit hours
CHE 391,392--Senior Research	2 to 4 credit hours

DEPARTMENT OF ECONOMICS

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

A. Study in area of concentration

Economics 151,152 (Economic Principles and Problems)

Economics 201 (Money, Banking and Monetary Theory)

Economics 202 (Business Fluctuations and Fiscal Policy)

Economics 211 (Principles of Economic Analysis)

Economics 221 (Economic Statistics)

Economics 233 (Monopoly and the American Economy)

The following courses are strongly recommended for majors in Economics:

Economics 222 (Economic Statistics, 2nd semester)

Economics 391-392 (Senior Seminar in Economics)

It is strongly recommended that majors in Economics select one year of college calculus.

B. Study in related fields

Twelve hours of work in courses in related areas in the Social Sciences approved for the student's program.

Courses in Economics

ECO 151,152--Economic Principles and Problems	6 credit hours (3 credit hours per semester)
ECO 201--Money, Banking and Monetary Theory	3 credit hours
ECO 202--Business Fluctuations and Fiscal Policy	3 credit hours
ECO 206--Economics of Industrial and Labor Relations	3 credit hours
ECO 211--Principles of Economic Analysis	3 credit hours
ECO 221,222--Economic Statistics	8 credit hours (4 credit hours per semester)
ECO 233--Monopoly and the American Economy	3 credit hours
ECO 391-392--Senior Seminar in Economics	6 credit hours

DEPARTMENT OF EDUCATION

Teacher Certification

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. 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 and philosophy of education, 6 credit hours. Departmental advisers and the Director of Teacher Preparation will inform each student of the courses designed to satisfy these requirements in his major field.

The courses in methods and materials of instruction are under the jurisdiction of the departments in which they are given. At present the following are being offered and others are being developed:

BIO 239--Materials and Methods in
Teaching Biology

EGL 239--Methods of Instruction in
Literature and Composition

MAT 239--The Number System

PHY 239--Materials and Methods in Teach-
ing Physical Science (for those
preparing to teach either physics
or chemistry)

SSC 239--Materials and Methods in Teach-
ing Social Studies

Excerpt from the State Education Department's requirements for certification.

" . . . (3) Requirements in the academic subject for a certificate

(a) To teach English

- (i) Permanent certificate. At least 51 semester hours in English, 15 of which shall be in approved advanced courses
- (ii) Provisional certificate. At least 36 semester hours in English

The total preparation for teaching English shall include work (although not necessarily separate courses) in the following areas:

- Advanced writing
- Concepts, processes and media of communication
- Development, structure and function of the English language
- Improvement of reading
- Literary materials for adolescents
- Literature: American, English, and world
- Oral composition (public speaking, argument or discussion)
- Oral interpretation (of prose, poetic, or dramatic literature)

(b) To teach a foreign language

- (i) Permanent certificate. At least 39 semester hours in a foreign language, 15 of which shall be in approved advanced courses
- (ii) Provisional certificate. At least 24 semester hours in a foreign language.

In addition, a candidate shall provide a written statement from a higher institution as evidence that he possesses a practical command of the language as an instrument of oral and written communication.

(c) To teach mathematics

- (i) Permanent certificate. At least 33 semester hours in mathematics including a full year of differential and integral calculus. Of this total, 15 semester hours shall be in approved advanced courses.
- (ii) Provisional certificate. At least 18 semester hours in mathematics including a full year of differential and integral calculus

The minimum preparation for a permanent certificate shall include at least one course from each of the following two groups:

Algebra: such courses as polynomial algebra, linear algebra, abstract algebra, theory of numbers

Geometry: such courses as projective geometry, foundations of geometry, non-Euclidean geometry, algebraic geometry, topology

(d) To teach a science

- (i) Permanent certificate. At least 57 semester hours in mathematics and the sciences. In addition to the work required for the provisional certificate, the equivalent of 3 full-year courses. These courses shall include work in the science of which certification is sought and in mathematics.

- (ii) Provisional certificate. At least 42 semester hours in mathematics and science distributed as indicated below

For a provisional certificate in one of the sciences (chemistry, physics, biology, or earth science) a candidate shall:

Complete a core of work that includes the equivalent of a full year's course in each of the following: mathematics, chemistry, physics, biology, earth science; and

Complete the equivalent of one additional full-year course in the particular science for which certification is sought; and

Become proficient in laboratory demonstrations and techniques. If this proficiency is attained other than by course work (credit for which appears on the transcript), the candidate is responsible for providing to the Bureau of Teacher Education and Certification a statement by the higher institution regarding his proficiency in this area.

- (iii) The holder of a certificate (either permanent or provisional) in a particular science shall be deemed certified to teach general science.

- (e) To teach the social studies

- (i) Permanent certificate. At least 51 semester hours in the social sciences, 15 of which shall be in approved advanced courses. Within the total preparation, which includes the distribution required for the provisional certificate, a candidate shall have a concentration of at least 18 semester hours in one of the following: Economics, geography, history, interdisciplinary courses in the social sciences, political science.

- (ii) Provisional certificate. At least 36 semester hours in the social sciences. These hours shall include the core listed below and at least 6 semester hours of United States history and 6 semester hours of European history.

The core of social sciences shall consist of at least 24 semester hours and shall include the equivalent of a full year's work in each of 4 of the following 6 areas:

Anthropology	Political science
Economics	Sociology
Geography	
History other than United States or European."	

For certificate requirements in music and art, consult either the Department of Fine Arts or the Department of Education.

Courses in Education

EDU 201--Human Development and Behavior	3 credit hours
EDU 345-346--History and Philosophy of Education	6 credit hours
EDU 350--Practice Teaching	6 credit hours

DEPARTMENT OF ENGLISH

In addition to the general University requirements for the B.A. degree, the following are the requirements for the degree in English:

A. Study in area of concentration

EGL 250 (English Language)

EGL 274 (Shakespeare)

EGL 281,282 (Literary Criticism)

Six approved electives in English and American literature:

these courses will be chosen with the approval of the departmental adviser to secure a proper distribution among the major historical periods and literary genres. At least one must be a 300-level course.

B. Study in related fields

Two years of course work in approved foreign languages:

this must include at least six hours of third-year college level study of literature in a foreign language.

Two semesters of course work in English or American history.

Two semesters of course work in philosophy and/or comparative literature.*

C. Departmental examination

Each student must pass a departmental examination on a prescribed list of books covering the range of English and American literature. This examination is normally taken at the beginning of the senior year.

*"Comparative literature" includes such courses as English 350 (Satire), Humanities 221 (Tragedy), etc.

Courses in English

EGL 101-102--Composition	6 credit hours
EGL 210--English Novel	3 credit hours
EGL 211--Contemporary British and American Novel	3 credit hours
EGL 223--Poetry of the Early Seventeenth Century	3 credit hours
EGL 225--Dryden, Swift, Pope, and Johnson	3 credit hours
EGL 228--Poetry of the Nineteenth Century	3 credit hours
EGL 230--Modern British and American Poetry	3 credit hours
EGL 239--Methods of Instruction in Literature and Composition	3 credit hours
EGL 241--Representative Figures in American Literature I	3 credit hours
EGL 242--Representative Figures in American Literature II	3 credit hours
EGL 250--The English Language	3 credit hours
EGL 271--Chaucer	3 credit hours
EGL 274--Shakespeare	3 credit hours
EGL 277--Milton	3 credit hours

EGL 281,282--Literary Criticism	6 credit hours (3 credit hours per semester)
EGL 310--Tudor and Stuart Drama	3 credit hours
EGL 341--Joyce	3 credit hours
EGL 350--Satire and the Satiric Spirit	3 credit hours
EGL 390--Independent Project	3 credit hours

EGL 228--Poetry of the Nineteenth Century	3 credit hours
EGL 230--Modern British and American Poetry	3 credit hours
EGL 239--Methods of Instruction in Literature and Composition	3 credit hours
EGL 241--Representative Figures in American Literature I	3 credit hours
EGL 242--Representative Figures in American Literature II	3 credit hours
EGL 250--The English Language	3 credit hours
EGL 271--Chaucer	3 credit hours
EGL 274--Shakespeare	3 credit hours
EGL 277--Milton	3 credit hours

DEPARTMENT OF FINE ARTS

During the academic year 1962-63 the requirement of Humanities 102 must be met by one of the following four courses: FAM 110, FAM 120, FAA 110, and FAA 120. The student thus has the option of choosing either music or art and of selecting a course suitable to his level of preparation.

Major in Music or Art with Teacher Certification:

Students majoring in music or art who wish to acquire teacher certification should consult with their advisers at an early date.

Art:

A student who is taking his Bachelor of Arts degree with a major in Art will be required to fulfill the following requirements in addition to those specified for all students:

A. Area of concentration

- (1) Studio Courses: 12 to 14 credit hours of courses approved for the student's program
- (2) Theory and History: 23 to 26 credit hours in courses approved for the student's program

B. Studies in related fields

- (1) Electives in Music, Theatre Arts and Aesthetics-- 9 credit hours of course work
- (2) Additional foreign language (Art majors are required to show proficiency in Italian and German)--6 credit hours of course work

Departmental Examinations:

1. Entrance Examination for Art Majors: At an appropriate time all prospective art majors will be required to take a departmental examination.
2. Final Examination: At the conclusion of the senior year all art majors must pass a departmental examination on certain aspects of the theory and history of art. The faculty will select a set list of books covering these fields.

Courses in Art

FAA 110--Introduction to the Visual Arts	3 credit hours
FAA 120--A Study in the Traditions of Art	3 credit hours
FAA 235--Modern Painting	3 credit hours

Music:

A student taking his Bachelor of Arts degree with a major in music will be required to fulfill the following requirements in addition to those specified for all students:

A. Area of concentration

- (1) Music Theory: 18 credit hours of course work
- (2) Music History: 9 credit hours of course work
- (3) Applied Music: 6 credit hours of course work

B. Studies in related fields

- (1) Electives in Art History, Theatre Arts, and Aesthetics: 9 credit hours
- (2) Additional foreign language: 6 credit hours
(Music majors are required to show proficiency in French and German)
- (3) Students who plan to go on to graduate work are strongly urged to take a senior seminar in Aesthetics and the Criticism of Music.

Departmental Examinations

1. Piano Proficiency: Students whose declared major is in music must, prior to their junior year, pass a proficiency examination in piano. They will be required to play simple piano pieces (chosen by the Department), and demonstrate enough of an acquaintance with the keyboard to be able to play their theory examples as they occur in the course of study.
2. Entrance Examination for Music Majors: On completion of Music 20-21, the basic course in harmony and counterpoint, all prospective music majors will be asked to take an examination in identifying the sounds they hear, in reproducing the sounds represented by notes on paper, and in harmonizing simple melodies at the keyboard.

3. Final Examination: At the conclusion of the senior year each music major must pass a departmental examination on certain aspects of music material selected by the faculty and appropriate to the student's field of interest.

Courses in Music

FAM 110--Introduction to Music	3 credit hours
FAM 120--A Study of Larger Musical Forms (Symphony, Opera, Concerto)	3 credit hours
FAM 101--University Chorus	no credit
FAM 103--University Chorale	no credit or 1 credit hour per year
FAM 115--Collegium Musicum	1 credit hour per year
FAM 233--Introduction to Opera	3 credit hours
FAM 235--Contemporary Music	3 credit hours

Theatre Arts:

Course in Theatre Arts

FTH 231--Theatre Arts--Drama on Stage	3 credit hours
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DEPARTMENT OF FOREIGN LANGUAGES

In addition to the general University requirements for the B. A. degree, the following are the requirements for the degree in Foreign Languages:

A. Study in area of concentration

18 semester hours in one foreign language in courses numbered 300 or above.

All students who major in a foreign language will be required to achieve proficiency in another foreign language.

B. Study in related fields

18 semester hours in related courses with the approval of the departmental adviser.

C. Teachers' certification

Students who wish to prepare for certification as secondary school teachers must take the courses in education required for certification in addition to Sections A and B. They will also be required to take 6 credits of a conversation and composition course in the language they intend to teach. The 3 credits in methods of teaching foreign languages plus the 12 credits in a second foreign language may, at the discretion of the department, be counted toward the fulfillment of the related field requirements.

Courses in Foreign Languages

French

FLF 111,112--Elementary French	6 credit hours (3 credit hours per semester)
FLF 211,212--Intermediate French	6 credit hours (3 credit hours per semester)
FLF 221,222--French Conversation and Composition	6 credit hours (3 credit hours per semester)
FLF 331,332--Major Writers in French	6 credit hours (3 credit hours per semester)
FLF 333,334--Advanced French Conversation and Composition	6 credit hours (3 credit hours per semester)
FLF 335,336--French Literature in the Seventeenth Century	6 credit hours (3 credit hours per semester)

German

FLG 111,112--Elementary German	6 credit hours (3 credit hours per semester)
FLG 211,212--Intermediate German	6 credit hours (3 credit hours per semester)
FLG 221,222--German Conversation and Composition	6 credit hours (3 credit hours per semester)
FLG 331,332--Major Writers in German	6 credit hours (3 credit hours per semester)
FLG 333,334--Advanced German Conversation and Composition	6 credit hours (3 credit hours per semester)
FLG 335,336--Goethe	6 credit hours (3 credit hours per semester)
FLG 345,346--The German Drama from Kleist to Brecht	6 credit hours (3 credit hours per semester)

Russian

FLR 111,112--Elementary Russian	6 credit hours (3 credit hours per semester)
FLR 211,212--Intermediate Russian	6 credit hours (3 credit hours per semester)
FLR 221,222--Russian Conversation and Composition	6 credit hours (3 credit hours per semester)
FLR 331,332--Major Writers in Russian	6 credit hours (3 credit hours per semester)

Spanish

FLS 111,112--Elementary Spanish	6 credit hours (3 credit hours per semester)
FLS 211,212--Intermediate Spanish	6 credit hours (3 credit hours per semester)
FLS 221,222--Spanish Conversation and Composition	6 credit hours (3 credit hours per semester)

DEPARTMENT OF HISTORY

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

- A. Courses in History: completion of 24 credit hours of history, including the following:
- 1) A one-year course in American History, to be taken when possible in the sophomore year.
 - 2) A one-year senior departmental seminar.
 - 3) Advanced courses (or occasionally tutorials), chosen in consultation with the adviser, which emphasize a particular field of interest in history.
- B. Courses in related fields: completion of 18 credit hours of advanced courses outside the department, selected with the approval of the adviser and related to the student's field of interest in History. They will generally be in the social sciences and/or humanities.

Courses in History

HIS 201--The Ancient World	3 credit hours
HIS 202--The Medieval World	3 credit hours
HIS 203--Early Modern Europe	3 credit hours
HIS 211--History of United States to 1877	3 credit hours
HIS 212--History of United States Since 1877	3 credit hours
HIS 221--Latin America to 1825	3 credit hours
HIS 222--Latin America Since 1825	3 credit hours
HIS 236--British History Since 1760	3 credit hours
HIS 241--Imperial Russia	3 credit hours
HIS 242--Soviet Russia	3 credit hours
HIS 251--The Expansion of Europe 1415-1815	3 credit hours
HIS 391-392--Senior Seminar in History	6 credit hours

INTERDEPARTMENTAL COURSES IN THE HUMANITIES

Courses in the Humanities

HUM 101,102--Introduction to the Arts	6 credit hours (3 credit hours per semester)
HUM 151-152--Analysis of Literary Forms	6 credit hours
HUM 201--Principles of Criticism	3 credit hours
HUM 203--Varieties of Romanticism	3 credit hours
HUM 221--Concepts of Tragedy	3 credit hours
HUM 231--Concepts of the Comic	3 credit hours

DEPARTMENT OF MATHEMATICS

In addition to the general University requirements for the B.S. degree, the following are the requirements for the degree in Mathematics:

Mathematics 111-112, 151-152, and 161-162 (Calculus)
or 113-114, 155-156, and 301,302 (Analysis)

Mathematics 234 (Linear Algebra)

Mathematics 235 (Algebraic Structures)
or 239 (The Number System)

Mathematics 311 (Introduction to Topology)

Mathematics 320 (Topology)
or 321 (Geometry)

Mathematics 349 (History and Foundations)

Mathematics 348 (Independent Study)

Physics 101-102 or 161,162 (General Physics)

Three additional credit hours in Mathematics courses numbered above 160.

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

Courses in Mathematics

MAT 111-112--Introduction to Mathematical Science	6 credit hours
MAT 113-114--Introduction to Analysis	6 credit hours
MAT 151-152--Calculus	6 credit hours
MAT 155-156--Intermediate Analysis	6 credit hours
MAT 161-162--Advanced Calculus	6 credit hours
MAT 234--Linear Algebra	3 credit hours
MAT 235--Algebraic Structures	3 credit hours
MAT 237--Probability and Statistics	3 credit hours
MAT 239--The Number System	3 credit hours
MAT 301,302--Advanced Analysis	3 credit hours per semester
MAT 311--Introduction to Topology	3 credit hours
MAT 315--Elementary Theory of Numbers	3 credit hours
MAT 320--Topology	3 credit hours
MAT 321--Geometry	3 credit hours
MAT 348--Independent Study in Special Topics	2 credit hours
MAT 349--History and Foundations	3 credit hours

DEPARTMENT OF PHILOSOPHY

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

A. Study in area of concentration

Philosophy 151 (Ethics)

Philosophy 162 (Logic)

Philosophy 201,202 (Major Thinkers)

Philosophy 341,342 (Analysis of Text)

Philosophy 391,392 (Advanced Seminar)

Three additional semesters of advanced work in Philosophy such as:

Philosophy 211 (Esthetics)

Philosophy 215 (Political Philosophy)

Philosophy 235 (Philosophy of Science)

Philosophy 245 (Advanced Logic)

Philosophy 345-346 (History and
Philosophy of Education)

B. Study in related fields

Approved electives outside Philosophy
(three semesters)

Courses in Philosophy

PHI 151--Ethics	3 credit hours
PHI 162--Logic	3 credit hours
PHI 201--Major Thinkers in the History of Philosophy: Ancient and Medieval	3 credit hours
PHI 202--Major Thinkers in the History of Philosophy: Modern	3 credit hours
PHI 211--Esthetics	3 credit hours
PHI 215--Political Philosophy	3 credit hours
PHI 235--Philosophy of Science	3 credit hours
PHI 245--Advanced Logic and Philosophy of Mathematics	3 credit hours
PHI 341,342--Analysis of Philosophic Texts	4 credit hours (2 credit hours per semester)
PHI 345-346--History and Philosophy of Education	6 credit hours
PHI 391,392--Advanced Seminar	4 credit hours (2 credit hours per semester)

INTERDEPARTMENTAL COURSES IN PHYSICAL SCIENCE

Bachelor of Science in Physical Science

Under normal circumstances, it is not possible for a student to fulfill both the requirements for a major in either physics or chemistry and the New York State requirements for teacher certification within his four undergraduate years. It is therefore impossible for this program to include as much intensive work in physics or chemistry as is required of the undergraduate major in those fields. A student completing the physical science program with an emphasis in either chemistry or physics who then decides to further his studies in that field will find that he must, in general, make up a deficiency of one year of undergraduate courses before he will achieve the same proficiency as a student completing the program leading to a Bachelor of Science in that field.

The program leading to a B. S. in Physical Science is a joint undertaking of the physics and chemistry departments under the supervision of a committee drawn from those departments. It is designed primarily as proper preparation for anyone intending to teach either physics or chemistry at the high school level. Under certain circumstances, however, a student preparing for advanced work in certain non-science fields might also elect this program.

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

Major requirements:

Physics 101-102 and Physics 151,152
Chemistry 101,102 and Chemistry 151,152
Mathematics 113-114 and Mathematics 155-156

A grade of C or above in each of these courses is required unless waived by the supervising committee.

Physics 351,352 or an equivalent course in modern physics or chemistry approved by the committee.

One additional year of physics or chemistry. This may not be met by Physics 251,252.

The following are New York State requirements for certification to teach a science at the secondary school level:

Two years in certified subject.

One year each in mathematics, biology, chemistry, physics, and earth science.

Eight hours in the theory and practice of education.

Eight hours in teaching methods and practice teaching.

To satisfy these requirements for certification in both chemistry and physics, a student must take the following courses in addition to the University requirements and major requirements:

Biology 101-102 or an eight hour biology equivalent acceptable to the committee.

Physics 251,252 (Earth Physics).

Education 201--Human Development and Behavior.

Education 345-346--History and Philosophy
of Education

Physical Science 239--Methods

Education 350--Practice Teaching.

DEPARTMENT OF PHYSICS

Bachelor of Science in Physics

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

Physics 101-102 and 151-152	(General Physics)**
Chemistry 101,102	(General Chemistry)
Mathematics 113-114 and 155-156	(Analysis)**
Physics 201,202	(Electromagnetic Theory)
Physics 211	(Mechanics)
Physics 220	(Methods of Mathematical Physics, I)
Physics 235,236	(Junior Laboratory)
Physics 341,342	(Modern Physics)
Mathematics 301,302	(Advanced Analysis)
Foreign Language: The proficiency requirement must be met in French, German, or Russian.	

*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.

**In special circumstances students who have taken Mathematics 111-112 and 151-152 instead of Mathematics 113-114 and 155-156, and Physics 161,162 instead of Physics 101-102 and 201-202, 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.

Courses in Physics

PHY 101-102--General Physics	8 credit hours
PHY 151,152--General Physics	8 credit hours (4 credit hours per semester)
PHY 161,162--General Physics	8 credit hours (4 credit hours per semester)
PHY 201,202--Electromagnetic Theory	6 credit hours (3 credit hours per semester)
PHY 211--Mechanics	3 credit hours
PHY 220--Methods of Mathematical Physics, I	3 credit hours
PHY 235,236--Junior Laboratory	4 credit hours (2 credit hours per semester)
PHY 239--Materials and Methods in Teaching Physical Science	3 credit hours
PHY 241,242--Electricity and Magnetism	8 credit hours (4 credit hours per semester)
PHY 251,252--Earth Physics	8 credit hours (4 credit hours per semester)
PHY 340--Methods of Mathematical Physics, II	3 credit hours
PHY 341,342--Modern Physics	6 credit hours (3 credit hours per semester)

PHY 343--Statistical Physics	3 credit hours
PHY 345,346--Senior Laboratory	4 credit hours (2 credit hours per semester)
PHY 351,352--Modern Physics	8 credit hours (4 credit hours per semester)

DEPARTMENT OF POLITICAL SCIENCE

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

- A. Courses in Political Science: completion of 21 credit hours in political science including:
- 1) Introduction to Political Theory
Comparative Government
American Government;
 - 2) A one-semester senior departmental seminar, to be offered 1963-64;
 - 3) Advanced work, with the consent of the adviser, in courses which emphasize diverse current approaches to political science.
- B. Courses in related fields: completion of 9 credit hours in appropriate advanced courses in the social sciences and/or humanities, selected with the approval of the adviser. For Education majors Social Science 201, 202, and 211,212 will most easily fulfill these requirements.

Courses in Political Science

POL 151--American Government	3 credit hours
POL 153--Comparative Government	3 credit hours
POL 201--Introduction to Political Theory	3 credit hours
POL 202--Problems of Marxism	3 credit hours
POL 211--Politics in the Developing Areas	3 credit hours
POL 221--British Parliamentary Democracy	3 credit hours
POL 224--Political Attitudes and Propaganda	3 credit hours
POL 225--International Relations	3 credit hours
POL 227--American Foreign Policy	3 credit hours
POL 229--Latin America and the United States	3 credit hours
POL 231--Introduction to International Law	3 credit hours

DEPARTMENT OF PSYCHOLOGY

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

- A. Study in area of concentration: completion of 25 units in psychology.

Psychology 151 (General Psychology)
Psychology 152 (Advanced General Psychology)
Psychology 162 (Statistical Methods in Psychology)
Psychology 205 (Experimental Psychology)
Psychology 215 (Abnormal Psychology)
Psychology 340 (Physiological Psychology)
Psychology 391,392 (Special Topics in Psychological Research and Theory)

- B. Study in related fields

Sociology-Anthropology 151,152 (Human Groups, Organizations, Societies, Introduction to Anthropology)
Philosophy 235 (Philosophy of Science)
Mathematics 113-114 (Introduction to Analysis)
(It is possible for the student to substitute other courses with the approval of the departmental adviser.)

Courses in Psychology

PSY 151--General Psychology	3 credit hours
PSY 152--Advanced General Psychology	3 credit hours
PSY 162--Statistical Methods in Psychology	3 credit hours
PSY 205--Experimental Psychology	3 credit hours
PSY 215--Abnormal Psychology	3 credit hours
PSY 340--Physiological Psychology	3 credit hours
PSY 391,392--Special Topics in Psychological Research and Theory	6 credit hours (3 credit hours per semester)

INTERDEPARTMENTAL COURSES IN THE SOCIAL SCIENCES

- SSC 101-102--History of Western Civilization
6 credit hours
- SSC 151-152--Culture, Personality and
Social System 6 credit hours
- SSC 201,202--Topics in the Policy Sciences
6 credit hours
(3 credit hours
per semester)
(either semester
may be taken
without the other)
- SSC 211,212--Topics in the Cultural-
Behavioral Sciences 6 credit hours
(3 credit hours
per semester)
- SSC 239--Materials and Methods in
Teaching Social Studies 3 credit hours
- SSC 381,382--Problems and Methods in
Social Thought and Social
Science 6 credit hours
(3 credit hours
per semester)

DEPARTMENT OF SOCIOLOGY-ANTHROPOLOGY

In addition to the general University requirements for the Bachelor of Arts degree, the following are the requirements for the degree in Sociology-Anthropology:

A. Study in area of concentration

Six courses listed below under Groups A, B, and C.
Sociology-Anthropology 391-392 (Senior Seminar).
One year of Interdisciplinary course work in Social Science.

Group A: Elements of Societies and Cultures

Sociology-Anthropology 151 (Human Groups, Organizations and Societies)

Sociology-Anthropology 152 (Introduction to Anthropology)

Group B: Social-Cultural Systems and Contemporary Social Trends

Sociology-Anthropology 162 (Social Systems and Community Patterns)

Sociology-Anthropology 205 (Social Problems, Conflicts and Movements)

Sociology-Anthropology 236 (Technology, Industrialization and Social Change)

Sociology-Anthropology 238 (Self, Society, Culture and Mental Health)

Group C: Theoretical and Research Methods in Sociology-
Anthropology

Sociology-Anthropology 201 (Research Methods in
Sociology-Anthropology)

Sociology-Anthropology 361 (Development of Sociology-
Anthropology to Year 1900)

Sociology-Anthropology 362 (Sociology and Anthropology
Today)

Sociology-Anthropology 151 or 152 is a prerequisite for advanced work in the department. Majors are encouraged to complete this requirement at their earliest opportunity. A selection of two of the three courses in Group C is strongly recommended. Students expecting to complete requirements for certification as secondary school teachers in the Social Studies are urged to consult the departmental and education advisers at an early date.

The department recommends that the language proficiency requirement be ordinarily met in French or German, unless exception is granted by the Chairman or Adviser.

Courses in Sociology-Anthropology

SAN 151--Human Groups, Organizations, Societies	3 credit hours
SAN 152--Introduction to Anthropology	3 credit hours
SAN 162--Social Systems and Community Patterns	3 credit hours
SAN 201--Research Methods in Sociology- Anthropology	3 credit hours
SAN 205--Social Problems, Conflicts and Movements	3 credit hours
SAN 236--Technology, Industrialization, and Social Change	3 credit hours
SAN 238--Self, Society, Culture and Mental Health	3 credit hours
SAN 361--Development of Sociology- Anthropology to Year 1900	3 credit hours
SAN 362--Sociology and Anthropology Today	3 credit hours
SAN 391-392--Senior Seminar in Sociology and Anthropology	6 credit hours

THE COLLEGE OF ENGINEERING

In 1956 the Board of Trustees of the State University of New York adopted a resolution which authorized an undergraduate program in engineering at the State University at Stony Brook. Pursuant to this resolution, the first class of engineering freshmen was admitted in the Fall of 1958 and enrolled in basic courses in the science and non-science areas. These courses were to serve as a suitable foundation for the engineering subjects which would follow.

During the 1959 academic year, the faculty at the Center presented to the Board of Trustees a recommended curriculum for the engineering science degree. The Board of Trustees adopted this curriculum in principle, and the Board of Regents subsequently gave its approval.

In the Spring semester of 1961, the formation of a College of Engineering was authorized by the Board of Trustees. The general faculty of the Center also approved the requirements for the degree of Bachelor of Engineering Science during this semester. The degree was conferred on the first engineering science graduates in June 1962.

ACADEMIC PROGRAM

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.

Traditional engineering departments are not represented at the State University at Stony Brook since 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. The 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.

In 1962-63 a program of graduate work in the Department of Thermal Sciences is being offered. For further information see the Graduate School Bulletin.

Requirements for the Bachelor of Engineering Science

A student will be recommended by the Faculty for the degree upon completion of the requirements listed in Section 1 through 4 below.

1. Required courses: Credit for or exemption from each of the following is required of all candidates:

English 101-102	6 hours
Humanities 101,102	6 hours
Humanities 151-152	6 hours
Social Science 101-102, 151-152	12 hours
Physids 101-102, 151,152	16 hours
Chemistry 101,102	8 hours
Mathematics 113-114, 155-156	16 hours

2. Quantity requirement: Every student is required to earn at least 128 semester hours of credit.
3. Quality requirement: A cumulative grade point average of 2.0 for all courses taken at the State University at Stony Brook is required of every student.
4. Elective requirement: 6 credits are required in the junior year in the areas of the humanities, including foreign languages, the social sciences, or the biological sciences.
5. Concentration requirement: Every student must meet the requirements of a program of concentration in Engineering Science approved by the Curriculum Committee of the College of Engineering.

6. Required freshman program: Every student admitted without advanced standing is required to register for English 101, Humanities 101 or 102, Social Science 101, Mathematics 113, and Physics 101.
7. Exemptions: On the recommendation of the Chairman of the course, a student is exempted without credit from any of the course requirements specified in Sections 1 or 6 above.

Numbering of Courses

Courses in the College of Engineering are designated by a system similar to that in the College of Arts and Sciences. The three-letter abbreviations are as follows:

ESG: Required Undergraduate Courses

ESA: Courses offered by the Engineering Analysis Department

ESE: Courses offered by the Electrical Sciences Department

ESM: Courses offered by the Material Sciences Department

EST: Courses offered by the Thermal Sciences Department

The numbering of courses will be as follows, according to the year in which they are normally taken:

101-150: freshman courses
151-199: sophomore courses
201-299: junior courses
301-399: senior courses
401-499: graduate courses

Odd numbers are used for Fall courses and even numbers for Spring. The numbers 100, 200, 300, 400 are not used.

ENGINEERING PROGRAM

First Year

1st Semester	Credits
Humanities 101	3
English 101	3
Social Science 101	3
Mathematics 113	3
Physics 101	<u>4</u>
	16

2nd Semester

Humanities 102	3
English 102	3
Social Science 102	3
Mathematics 114	3
Physics 102	<u>4</u>
	16

Second Year

1st Semester

Humanities 151	3
Social Science 151	3
Mathematics 155	3
Physics 151	4
Chemistry 101	4
Graphic Art (ESG 151)	<u>1</u>
	18

Second Year

2nd Semester	Credits
Humanities 152	3
Social Science 152	3
Mathematics 156	3
Physics 152	4
Chemistry 102	4
Introduction to Digital Computers (ESG 162)	2
	<hr/>
	19

Third Year

1st Semester

ESG 201 Thermodynamics I	3
ESE 251 Electrical Sciences I	3
ESG 221 Engineering Analysis I	3
ESG 211 Engineering Laboratory I	3
ESG 261 Mechanics I	3
Elective (Non Tech)	3
	<hr/>
	18

2nd Semester

ESG 202 Thermodynamics II	3
ESG 252 Electrical Science II	3
ESG 222 Engineering Analysis II	3
ESG 212 Engineering Laboratory II	3
ESG 232 Material Sciences I	3
Elective (Non Tech)	3
	<hr/>
	18

Fourth Year

1st Semester	Credits
ESG 353 Electrical Science III	3
ESG 363 Mechanics II	3
ESG 333 Material Sciences II	3
ESG 340 Systems Synthesis	3
ESG 313 Engineering Laboratory III	3
Elective (Technical)	3
	<u>18</u>

2nd Semester

ESG 323 Engineering Analysis III	3
ESG 334 Material Sciences III	3
ESG 305 Heat Transfer	3
ESG 364 Mechanics III	3
Elective (Technical)	3
Elective (Technical)	3
	<u>18</u>

Courses of Instruction

Required Undergraduate Courses

ESG 515--Graphic Art I	1 credit hour
ESG 162--Introduction to Digital Computers	2 credit hours
ESG 201--Thermodynamics I	3 credit hours
ESG 202--Thermodynamics II	3 credit hours
ESG 211--Engineering Laboratory I (Engineering Instrumentation and Measurements)	3 credit hours

ESG 212--Engineering Laboratory II (Engineering Experimentation)	3 credit hours
ESG 221--Engineering Analysis I	3 credit hours
ESG 222--Engineering Analysis II	3 credit hours
ESG 232--Material Sciences I	3 credit hours
ESG 251--Electrical Sciences I	3 credit hours
ESG 252--Electrical Sciences II	3 credit hours
ESG 261--Mechanics I (Introduction to Mechanics)	3 credit hours
ESG 305--Heat Transfer	3 credit hours
ESG 313--Engineering Laboratory III (Systems Laboratory)	3 credit hours
ESG 323--Engineering Analysis III	3 credit hours
ESG 333--Material Sciences II	3 credit hours
ESG 334--Material Sciences III	3 credit hours
ESG 340--Systems Synthesis	3 credit hours
ESG 353--Electrical Sciences III	3 credit hours
ESG 363--Mechanics II (Structural Mechanics)	3 credit hours
ESG 364--Mechanics III (Fluid Mechanics)	3 credit hours

Thermal Sciences - Undergraduate Electives

EST--Compressible Fluid Mechanics	3 credit hours
EST 372--Boundary Layer Theory	3 credit hours
EST 366--Thermal Sciences & Fluid Mechanics Laboratory	3 credit hours
EST 375--Viscous Fluids	3 credit hours

Engineering Analysis - Undergraduate Electives

ESA 315--Random Processes in Engineering Systems	3 credit hours
ESA 316--Special Functions of Engineering Analysis	3 credit hours

Material Sciences - Undergraduate Electives

ESM 325--X-ray Diffraction and the Structure of Matter	3 credit hours
ESM 326--Semiconductor Theory and Technology	3 credit hours

GRADUATE COURSES

A list of Graduate Courses is contained in a separate Graduate School Bulletin. Inquiry should be directed to the Graduate School Office, State University of New York at Stony Brook, Long Island.

AF ATHLETIC FACILITIES
 TC TENNIS COURTS
 NG NORTH ENTRANCE GATE
 SG SOUTH ENTRANCE GATE
 RR RAILROAD STATION,
 STONY BROOK

CAMPUS BUILDINGS

- | | |
|--------------|-------------------|
| 1 HUMANITIES | 8 HEATING PLANT |
| 2 CHEMISTRY | 9 PUMPING STATION |
| 3 PHYSICS | 10 ELECTRIC S.S. |
| 4 BIOLOGY | 11 ENGINEERING |
| 5 LIBRARY | 26 ADMINISTRATION |
| 6 GYMNASIUM | 27 INFIRMARY |
| 7 SERVICE | 28 STUDENT UNION |

RESIDENCE HALLS

- | | |
|-------|-------|
| 30 G | 33 H |
| 31 AS | 34 JS |
| 32 AN | 35 JN |

PARKING AREAS

- | | | |
|----|----|----|
| A1 | G1 | R1 |
| A2 | G2 | |
| A3 | | |

• UNDER CONSTRUCTION
 ▲ CONSTRUCTION STARTS 1963

SCALE IN FEET
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 500
 1000
 1500



TO NESCONSET HWY

NICOLL ROAD

ROAD

TO SMITHTOWN

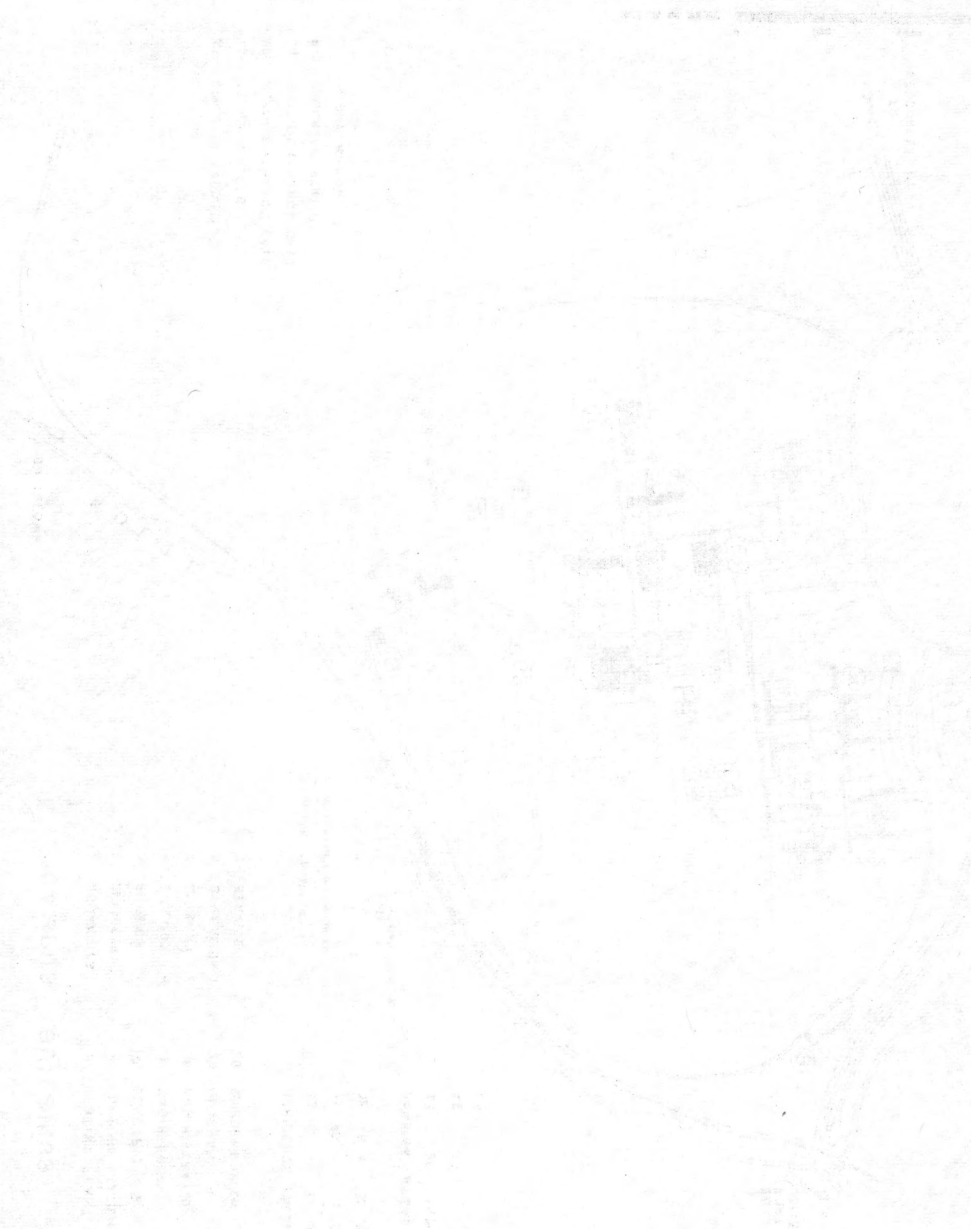
ROUTE

25 A

TO STONY BROOK

TO PORT JEFFERSON

STATE UNIVERSITY OF NEW YORK
 AT STONY BROOK
 STONY BROOK LONG ISLAND

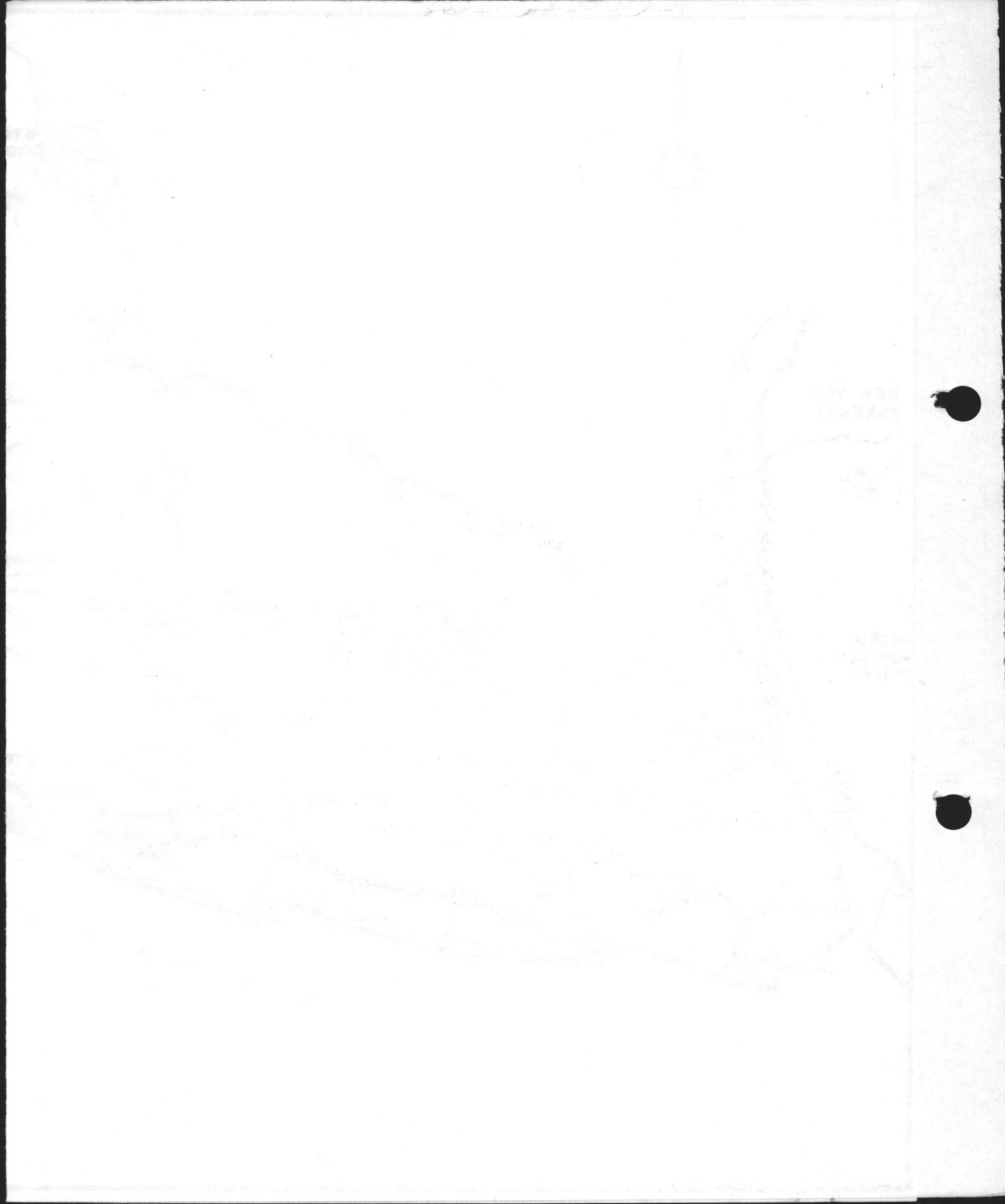


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