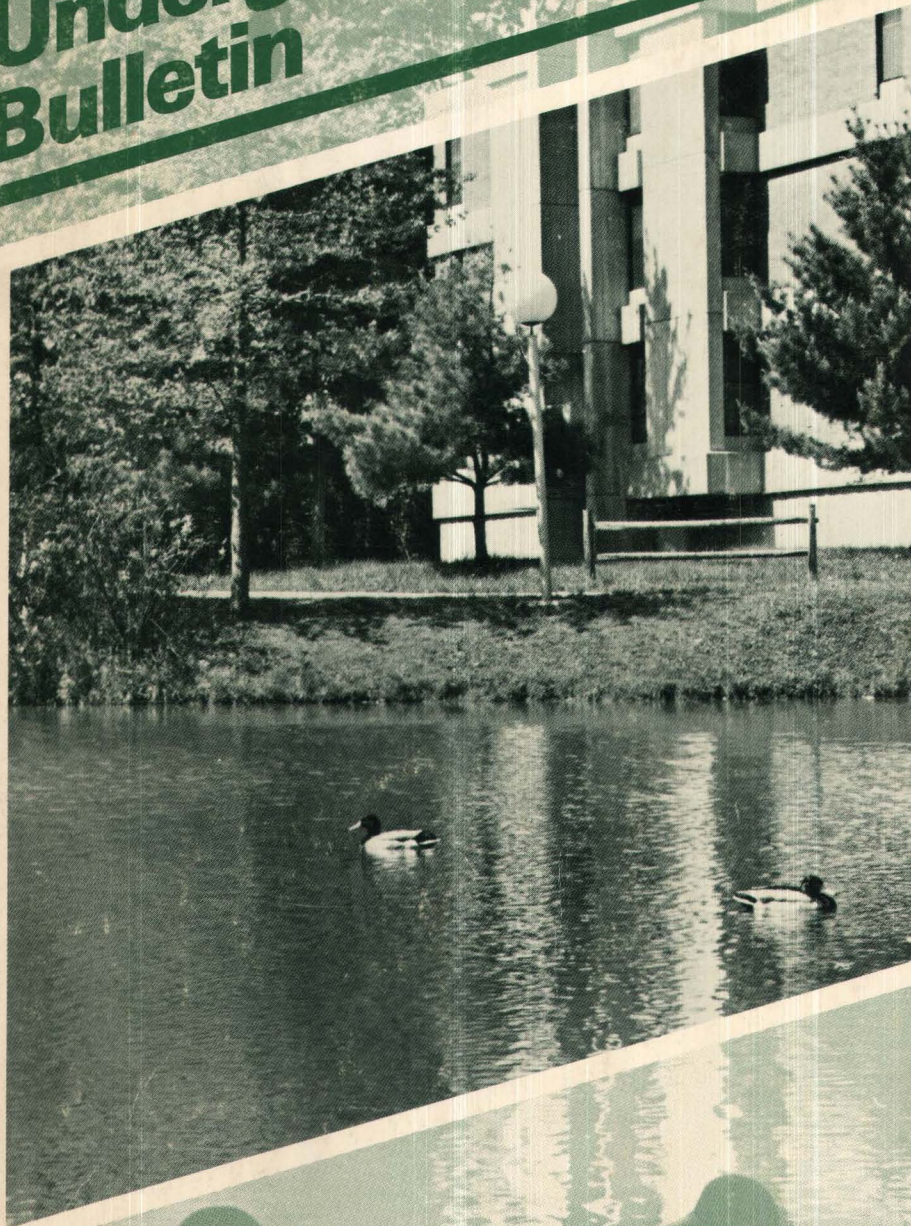


1985-87 Undergraduate Bulletin

For Reference

Not to be taken from this room



STATE UNIVERSITY OF NEW YORK AT
Stony Brook

Undergraduate Courses of Study

Undergraduates at the State University of New York at Stony Brook may take courses in any of the following subject areas. Subjects students can major in are listed with the HEGIS code number and the degree. Information on each subject is available on the page indicated. (Note: Students who enroll in programs not registered or otherwise approved may jeopardize their eligibility for certain student aid awards. All programs described in this *Bulletin* are approved.)

The estimated number of teaching assistants, given at the end of the faculty list of each undergraduate course of study, reflects those graduate students who teach undergraduates in classroom or laboratory settings. It is not the total number of supported graduate students.

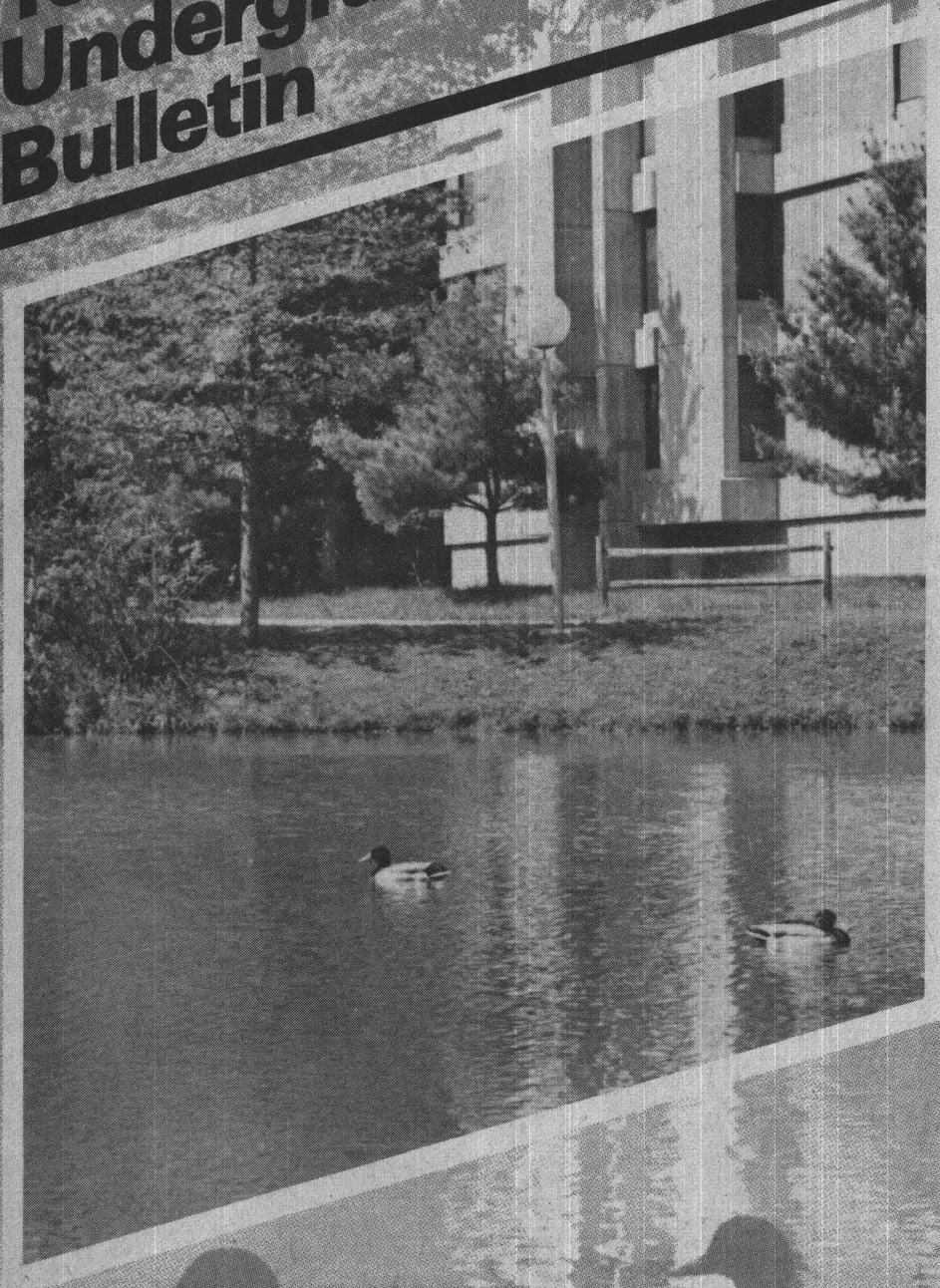
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Address and Phone

The mailing address of the University is:
State University of New York at Stony
Brook
Stony Brook, New York 11794

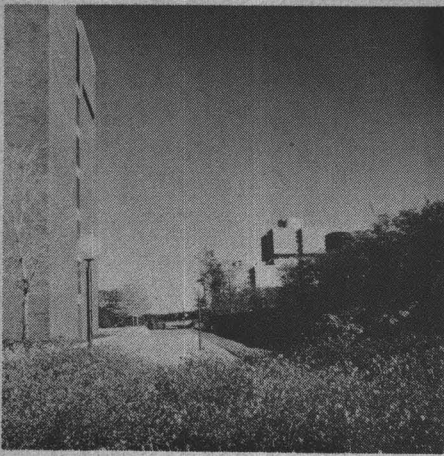
The general telephone number is:
(516) 246-5000

The University represents that the information in this publication is accurate as of the press date. Circumstances may require that a given course be withdrawn, or that alternate offerings be made. Names of instructors for courses, and days and times of class sessions are given in the Class Schedule, available to students at registration. All applicants are reminded that the State University of New York at Stony Brook is subject to the policies promulgated by the Board of Trustees of the State University of New York. Fees and charges are set forth in accordance with such policies and may well change in response to alterations in policy or actions of the legislature during the two-year period covered by this publication. The University reserves the right to change its policies without notice.

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Introduction to Stony Brook

Background

Established little more than two decades ago as New York's comprehensive State University Center for the downstate-metropolitan area, the State University of New York at Stony Brook is recognized as one of the nation's finest universities. Stony Brook offers excellent programs in a broad spectrum of academic subjects and conducts major research and public service projects. Over the past decade, externally funded support for Stony Brook's research programs has grown faster than at almost any other university, supporting its claim of being the major research campus in the nation's largest public university. Internationally renowned faculty members offer courses from the undergraduate to the doctoral level for more than 16,000 students through more than 100 undergraduate and graduate degree programs. Extensive resources and support services help foster intellectual and personal growth.

In 1960, the State Board of Regents and the late Governor Nelson Rockefeller established Stony Brook's mandate as a comprehensive University Center to "stand with the finest in the country." In its latest reaccreditation, Stony Brook was given high praise for its achievements to date and recognized for so quickly becoming "an institution of national stature."

Founded in 1957 at Oyster Bay, Long Island, as a State University College to prepare secondary school teachers of mathematics and science, the young school moved in 1962 to its present location on Suffolk County's north shore.

Since then, Stony Brook has expanded to encompass 98 buildings on 1000 acres. The faculty has grown from about 175 to 1280, the student body from 1000 to more than 16,000, and the annual budget from about \$3 million to over \$230 million.

One of Long Island's largest employers, the University serves this

complex, growing region through research into area problems; through cooperative programs with governmental agencies at the federal, state, and local levels; and by responding to the region's extraordinary demand for higher education opportunity. Stony Brook strives to develop programs of the highest quality in areas of great public need, including health sciences, engineering and applied sciences, public policy, marine and environmental sciences, and the arts.

Location

Stony Brook is located about 60 miles east of Manhattan on the wooded north shore of Long Island, convenient to New York City's cultural life and Suffolk County's tranquil, recreational countryside and seashores. The internationally recognized research facilities of Brookhaven National Laboratory and the Cold Spring Harbor Laboratory are not far away. Located near the restored village of Stony Brook at the geographical center of Long Island, the campus is some 60 miles west of Montauk Point. It is within minutes of New York State's richest farmland and clam beds, its spectacular Atlantic beaches, the craggy coastline and cliffs of Long Island Sound, and its picturesque village greens and gracious country homes. Long Island's hundreds of miles of magnificent coastline attract many swimming, boating, and fishing enthusiasts from around the world.

Campus

Stony Brook's bustling academic community is situated amid fields and woodland. Bicycle paths, an apple orchard, park benches, a duck pond, and spacious plazas complement modern laboratories, classroom buildings, and the Fine Arts Center, giving Stony Brook spirit and cultural vitality.

Surrounding the Frank Melville, Jr. Memorial Library at the center of the campus (see map at the back of this book) are the major academic buildings for arts and sciences and engineering, the Van de Graaff nuclear accelerator, the Administration Building, Lecture Center, Laboratory-Office Building, Educational Communications Center, Computing Center, Stony Brook Union, Gymnasium, and other service and activities buildings. Stony Brook's Fine Arts Center, situated between the Library and Administration Building, provides superb performing arts facilities and houses the Departments of Theatre Arts, Music, and Art. A spacious outdoor plaza in which concerts may be held connects the Library, Stony Brook Union, and Fine Arts Center in the middle of the campus. The Social and Behavioral Sciences Building houses five departments as well as the Center for Continuing Education.

Encircling the academic buildings are six residential quadrangles with living space for about 1000 students each. The quads are the basic social units for on-campus students, providing residence halls, dining rooms, and a diversity of student-sponsored enterprises and social facilities. About half of the undergraduate student body lives on campus. A 240-unit complex of one-, two-, and three-bedroom apartments provides additional housing near the Health Sciences Center.

South of the academic cluster is the 26-acre Ashley Schiff nature preserve. Beyond these woods and linked to the rest of campus by a shuttle bus service are 11 functionally adaptable single-story buildings housing the Marine Sciences Research Center and the School of Dental Medicine.

The Health Sciences Center comprises academic and support areas for five professional schools and University Hospital, a 540-bed facility that admitted its first patients in 1980. Preliminary authority has been granted for construction of a permanent facility for the School of Dental Medicine in proximity to the clinically oriented area of the campus.

Parking is available for 9100 cars, including a 2000-car surface parking lot for commuting students, two 970-car parking structures for the Health Sciences complex, as well as a 980-car parking structure serving the academic buildings.

Students

Stony Brook's current enrollment is about 16,000 (11,000 undergraduates and 5000 graduate students, including about 2000 part-time graduate students enrolled in continuing education programs). Approximately 62% of Stony Brook's undergraduates come from Nassau and Suffolk counties, 25% are from New York City, and 90% are from New York State. Foreign students represent some 75 countries. At any one time more than 100 Stony Brook students are studying abroad in approved exchange programs in such diverse countries as Canada, Denmark, Colombia, the People's Republic of China, and Poland.

Typical attrition and graduation rates for first-time, full-time Stony Brook students are as follows:

Statistics for 1982 Students Who Entered Stony Brook Fall 1978	
Attrition Rates	
during 1st year	17%
during 2nd year	15%
during 3rd year	9%
during 4th year	4%
during 5th year	3%
Persisting Students in 6th year	2%
Graduation Rates	
through 4th year	38%
5th year	12%

The University aims at high standards in all its programs. Its record of placing graduates in the nation's best graduate and professional programs indicates the campus' successes in making high-quality programs available to a broad and diverse student body.

Faculty and Research

The vast majority of Stony Brook's 1280 faculty members hold doctoral degrees and 90% or more are engaged in active research leading to publication, much of it supported by external grants and contracts. The Middle States Association had high praise for Stony Brook's faculty in its latest campus reaccreditation report, noting that "several departments rank among the top in the country and most are of a very high level of quality as measured in terms of professional reputation and scholarly activities." The faculty-student ratio is about one faculty member for every 15 students.

Among the faculty with whom undergraduates study are Distinguished Teaching Professors John Truxal in engineering and Elof Carlson in biological sciences, and numerous recipients of the State University Chancellor's Award for Excellence in Teaching. Stony Brook is proud to name as its faculty such prestigious members as Einstein Professor C.N. Yang, a Nobel Laureate in physics; University Professors Lewis Thomas in the health sciences, former Chancellor of Memorial Sloan-Kettering Cancer Center, and Paul C. Lauterbur in chemistry, the 1984 Albert Lasker Medical Research award winner for his work in nuclear magnetic resonance; Distinguished Professors Lewis Coser and Justus Buchler in sociology and philosophy, respectively; and Seymour S. Cohen in pharmacology. Pulitzer Prize-winning poet Louis Simpson in English; poet-playwright Amiri Baraka; poet-essayist June Jordan; John Russell Brown, former director of London's National Theatre; National Book Award winner Charles Rosen in music; best-selling author Thomas Flanagan (*The Year of the French*); and art critic Lawrence Alloway.

The Stony Brook faculty includes ten members of the American Academy of Arts and Sciences, ten members of the National Academy of Sciences, and one member of the National Academy of Engineering. More than 300 scholars from 40 countries research and teach at Stony Brook for various periods of time throughout the year.

Autistic children, cancer, lasers, moon rocks, recombinant DNA, the psychology of political attitudes and behavior, the social history of American slavery, and urban problems are but a few of hundreds of research subjects currently under examination by faculty and students at Stony Brook. This past year Stony Brook faculty members attracted some \$45 million from the federal government and private foundations and individuals to support research. Over 600 sponsored projects are actively being pursued, in addition to scientific studies, training programs, public service projects, educational activities, and library support.

Academic Programs

The broad range and high quality of programs at Stony Brook give undergraduates opportunities to pursue both traditional and innovative curricula. Students are encouraged to sample widely, or to delve deeply into one field, guided by nationally distinguished scholars. The undergraduate curriculum benefits from the special resources that a comprehensive university center can provide. The calibre of faculty, strong in pure and applied research and in the creative arts, results in excellent teaching and in program offerings at the forefront of rapidly changing areas of knowledge.

Undergraduates at Stony Brook may take courses in any of the subject areas in the Courses of Study list (inside front cover).

The *College of Arts and Sciences* offers departmental, interdisciplinary, and interdepartmental majors, programs leading to provisional certification in secondary education, and a variety of minor programs. Minors are not required and do not in themselves lead to a degree. An interdisciplinary or interdepartmental major allows a student to explore a broad study area from the perspective of several disciplines. In some cases the program's own courses examine an intellectual program from the point of view of several disciplines. In other cases the major allows students to choose courses from several departments. Within any major in the College, a student may undertake independent study projects. This option allows the student, in consultation with appropriate faculty members, to develop an individual course of academic investigation and study. Through this option, also, qualified upper-division students may participate in the research projects of faculty members. Several departments offer internships through which the knowledge gained in classroom study is applied to the world of work.

The *College of Engineering and Applied Sciences* offers a wide spectrum of programs that provide students with opportunities to enter employment in industry or proceed to graduate study in a variety of fields. Three accredited major programs in engineering give the student enough latitude to plan programs within traditional engineering disciplines or in new interdisciplinary fields. The

engineering degree programs place a strong emphasis on individual design and research projects in the junior and senior years, when students are encouraged to work closely with members of the faculty on projects of interest to them. Programs in the applied science area emphasize applications of analytical and computing techniques to a wide variety of technical and societal problems as well as the design and operation of computer systems and environments.

The *W. Averell Harriman College for Policy, Analysis and Public Management* provides comprehensive education and research for the public sector, offering programs to prepare governmental service professionals with the capability for combining highly technical expertise with broad analysis of policy. Named for one of New York's most distinguished public servants, the College trains students for careers primarily as analysts, planners, and managers. The curriculum and degree requirements are described in the *Graduate Bulletin*. Although the College's main program is at the graduate level, it also offers an accelerated curriculum in which a student who has completed 60 credits and demonstrated aptitude for quantitative analysis and an interest in public service can earn the B.A. and M.S. degrees in three years (a total of five undergraduate/graduate years).

The *Health Sciences Center* with its five professional schools and its 540-bed teaching and research hospital is the fastest-growing unit of the University. Undergraduate degree programs are offered in the Schools of Allied Health Professions, Nursing, and Social Welfare. Many health sciences courses are open to upper-division students from the other academic areas.

The *Center for Continuing Education* offers the opportunity to attend school part-time at the graduate level. Its programs are designed to make it easier for people who work during the day to continue their education, and for this reason most of the classes in this program are offered in the late afternoon and evening. The Center offers an interdisciplinary Master of Arts in Liberal Studies degree. Students



seeking the degree are required to complete a 30-credit program of study and master's essays, usually chosen from among those used to satisfy graduate course requirements.

The *Graduate School* offers advanced degree programs in many fields leading to the master's and doctoral degrees. Stony Brook's advanced graduate programs have consistently received exceptionally high ratings from external evaluation agencies, and many are internationally recognized.

The following degrees are offered at Stony Brook: Bachelor of Arts, B.A.; Bachelor of Engineering, B.E.; Bachelor of Science, B.S.; Master of Arts, M.A.; Master of Arts in Liberal Studies, M.A./L.S.; Master of Fine Arts in Dramaturgy, M.F.A.; Master of Music, M.M.; Master of Science, M.S.; Master of Social Welfare, M.S.W.; Doctor of Dental Surgery, D.D.S.; Doctor of Medicine, M.D.; Doctor of Philosophy, Ph.D.; Doctor of Musical Arts, D.M.A.; and Doctor of Arts in foreign languages, D.A.

As part of the State University of New York, the University at Stony Brook is accredited by the Middle States Association of Colleges and Secondary Schools. The College of Engineering is accredited by the Accreditation Board for Engineering and Technology, Inc. The Department of Chemistry is accredited by the American Chemical Society.

Academic publications edited or published at the University include *Advances in Learning and Behavioral Disabilities; Anthropology; Archives of Sexual Behavior; Ascent; Biological Psychiatry; Black on White; Bulletin of Research in the Humanities; Circuits, Systems, and Signal Processing; Developmental Review; Evolution; Gastrointestinal Radiology; Grady; Heat Transfer; Journal of Applied Behavior Analysis; Journal of College*

Science Teaching; Journal of Educational Technology Systems; Journal of Histotechnology; Journal of Literary Translation; Journal of Urban Analysis; Magnetic Resonance in Medicine; Marine Biology Letters; Materials Letters; Medieval Prosopography; Mental Retardation and Developmental Disabilities; Physics and Chemistry of Minerals; The Physics Teacher; Previews of Heat and Mass Transfer; Quarterly Review of Biology; Slavic and East European Arts; Socio-Economic Planning Services; Surface Technology; Symbolic Interaction; and Transplantation Proceedings.

University Libraries

The Stony Brook campus has a number of libraries established to meet the information needs of students and faculty. The Frank Melville, Jr. Memorial Library, the main library building, provides both an intellectual and physical focal point for the campus and is among the largest academic libraries in the nation. Within the architecturally distinctive Melville building are collections serving the social sciences, humanities, fine arts, and music. These collections are particularly strong in English, Western European, and Latin American literature, as well as in modern Western history and Latin American history. Special departments in the library provide ready access to current fiction and non-fiction, current periodicals, government documents, maps, microforms, and legal materials. Other facilities of note are a music listening center, a student lounge, and a variety of individualized study carrels. The full range of library services, including open stack privileges and database searches, are available to all students.

There are five branch science libraries. Four of these—chemistry, earth and space sciences, engineering, and mathematics/physics—are located in departmental buildings. The fifth, biology, is located in its own building. There is also a Health Sciences Library in the Health Sciences Center. Collectively, the University Libraries contain over 1,500,000 bound volumes and 2,000,000 publications in microformat.

Other library facilities of note are the Senator Jacob K. Javits collection of

private papers and memorabilia, 200 million items establishing one of the nation's leading archives of 20th-century congressional papers; the William Butler Yeats Archives; and the Institute for Advanced Studies of World Religions, a privately endowed foundation which assists the study and teaching of world religions, particularly Asian systems.

Library Hours

During the academic year, the library is generally open Monday through Thursday, 8:30 a.m. to 12 midnight; Friday, 8:30 a.m. to 10 p.m.; Saturday, 10 a.m. to 6 p.m.; and Sunday, 2 p.m. to 12 midnight. During intersession and other vacation periods, hours are generally 8:30 a.m. to 5 p.m., Monday through Friday, and closed weekends. The library is usually closed on major holidays when classes are not held.

Note: Library hours are subject to change from year to year, and even within the year, depending on constraints imposed by budgetary limitations. Students are urged to check the posted hours of operation at the various branch libraries, as well as at the main library.

Computing Center

The Stony Brook Computing Center is the hub of a growing network of equipment located across the campus which provides a variety of services to the end user.

Administrative needs are served by a Sperry 1100/62 with 8 million characters of main memory, 5 billion characters of disk storage, driving a network of terminals. This is tied via a communications link to other SUNY computers.

Large-scale research and instructional needs are met by a Sperry 1100/82 with 12 million characters of main memory and 10 billion characters of storage. With the administrative machine, it shares four high-speed printers and six tape drives, as well as supporting two remote printers and more than 100 terminals at public access sites.

PROJECT SINC, the Stony Brook Instructional Networked Computer, will

provide six clusters of 24 workstations each for use by undergraduates. They will be networked together via Ethernet and will have shared hard disks and laser printers. The digital professional microcomputers offer word processing, spread sheet, data management, and three programming languages: BASIC, PASCAL, and FORTRAN.

The SINC lab for the humanities (located in the Library), for the social and behavioral sciences (located on the 6th floor of the Social and Behavioral Sciences Building), and for the health sciences (located on Level 3 of the HSC), became operational in spring 1985. The remaining three clusters for engineering, mathematics/physics, and chemistry will be operational in the coming semesters.

The Center is currently open to students more than 80 hours weekly. Extended hours are available at the end of each semester. The equipment itself operates around the clock.

Consulting services are available to aid users with use of the large array of software.

Plans are already underway for implementing significant further upgrades to the system in accordance with a master plan.

Gymnasium

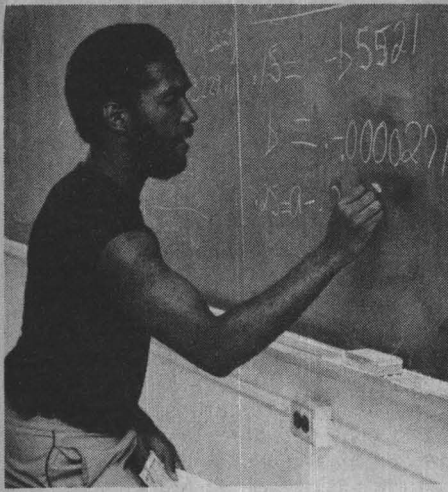
The Gymnasium building, which includes a swimming pool, large and small gyms, squash and handball courts, exercise and universal gym rooms, and a dance studio, is open seven days a week from 8 a.m. to midnight except on the eve of a major holiday, when it closes at 4 p.m. The Gymnasium is also closed on major holidays.

Other physical education facilities include tennis courts, a quarter-mile track, and separate fields for baseball, softball, soccer, and intramural football.

Most facilities may be used for recreational purposes when they are not scheduled for classes, intramural or intercollegiate events, or special events. Current schedules of recreation hours may be obtained in the Physical Education Office. Hours are subject to change depending on availability of staff.

Stony Brook Union

The Stony Brook Union serves as the core of student activities, leadership development, and organizational growth. It is a recreation, conference, and



information center, a place for relaxation, a food and beverage establishment, a theatre, a service center, and, in short, a University-wide facility dedicated to student development and the promotion of informational student/faculty/staff interaction. The Union is the home of student organizations, student government and clubs, and it is essential and significant to students' lives and experiences.

The Union is an integral and vital part of the educational life of the campus, sharing with the classroom the common goal of intellectual and personal growth of the individual. The continuing goal of the Union is the creation of an environment that permits self-exploration and encourages members of the campus community and their guests to meet and share ideas and interests.

Through its boards, committees, student volunteers, and staff, and its cultural, social, and recreational programs, the Union provides cooperative opportunities for the realization of intellectual, creative, and communicative skills. In all its processes, the Union mobilizes its resources to serve effectively the needs of the campus community through the interaction of people with diverse ideas and values.

The Union has space for many kinds of events. There are nine meeting and conference rooms, an auditorium that seats 365 persons, and a ballroom that can accommodate 600. The Art Gallery displays the works of campus and community artists and is open weekdays for browsing.

The Union hosts hundreds of events annually including College Bowl, Caribbean Week, opening activities, symposia, club fairs, and more. Academic departments, student clubs and organizations, and community

groups also sponsor co-curricular activities, conferences, and educational forums in the facility.

The University Information Center, located in the lobby, is a campus-wide resource center. Campus directory information, campus maps, bus and train schedules, and concert, film, and other events information are available. The Information Center's phone number is 246-3636. The union also houses "Info-Line" a taped, campus telephone information system.

The Office of Student Activities is the hub for campus-wide student programs and events. Its professional staff serve as advisers for campus groups and instructors in the acquisition of leadership skills and training. It is the prime resource for student life activities.

The Faculty Student Association (FSA) is the campus auxiliary service organization. Located in Room 282, FSA operates many services including: check cashing, vending, food services, the meal plan office, and several eating places including the main cafeteria, the Union Station Deli, Dale's Ice Cream Pub, and the End of the Bridge Restaurant/Pub.

The Rainy Night House, a student-run cafe, serves specialty teas, beer, brownies, and other pastries. Campus talent is booked there weekly to entertain patrons.

The Union Crafts Center offers workshops in ceramics, photography, silkscreening, leatherwork, bartending, cooking, and in many other crafts and skills areas. These non-credit classes are taught by professional instructors and are open to all. Fees are nominal. For information call 246-3657.

The Union serves as headquarters for many student groups such as Polity (the undergraduate student government), Womyn's Center, and the Commuter College. In addition, *Statesman*, the student newspaper, the University radio station, WUSB-FM (90.1), and SCOOP audio-visual service operate from the center.

Further information about the Stony Brook Union or its services and programs can be obtained by calling the Information Center at 246-3636, or the Director's Office at 246-7101.

Hours of Operation

During the fall and spring semesters, the Stony Brook Union is open Monday through Wednesday, 8 a.m. to 1 a.m.; Thursday and Friday, 8 a.m. to 2 a.m.; Saturday, 10 a.m. to 2 a.m.; and Sunday, 10 a.m. to 1 a.m. During recesses or intercession it is open Monday through Friday, 8 a.m. to 5 p.m. and is closed Saturday and Sunday. The Union is closed New Year's Day, Easter Sunday, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. *Note:* Union hours are subject to change from year to year and even within the year. For more specific building hours information, call 246-3636.

Special Centers and Institutes

The *Allergic Diseases Center* diagnoses, treats, and conducts research into immunological disorders; the *Bach Aria Festival and Institute* consists of forty young professional musicians on fellowship who study and perform the music of Bach with the members of the Bach Aria Group: performances, lectures, master classes, workshops, and open rehearsals are all available to the public; the *Center for Industrial Cooperation* links the research resources of the University to the needs of Long Island industry, especially in areas of high technology; the *Center for Photographic Images of Medicine and Health Care* collects, catalogs, and disseminates slide duplicates of historical photographs relating to medicine and health care; its slide archive is located in the Rare Book Room of the Health Sciences Center Library.

The *Creative Arts Center* maintains a collection of poetry and fiction as well as video and audio cassette recordings of writers reading from their own works and sponsors readings by established and younger writers, lectures, and symposia on the relationships of the humanities to the other disciplines.

The *Economic Research Bureau*, in cooperation with other University units and community agencies, conducts research in policy problems in health economics, public finance, and regional economics; the *Educational Communications Center* helps develop more effective teaching methods through the use of media and other technical aids; the *Educational Products*

8 Information Exchange Institute is a non-profit consumer agency for educational materials and equipment, chartered by the Board of Regents of the State of New York; Stony Brook's branch of *Empire State College*, the State University of New York's non-traditional learning arm, offers study toward associate, bachelor's, and master's degrees without formal class attendance; the *Institute for Advanced Studies of World Religions*, a private, non-profit educational foundation, located a major part of its informational facilities at Stony Brook in 1972. It fosters international cooperation in religious studies and assists the study and teaching of world religions, particularly Asian faiths, through its library containing more than 60,000 volumes (in 31 Asian and 10 non-Asian languages) and nearly 590 periodical titles, bibliographical information services, and microform resource, translation, book publication, and research programs.

The *Institute for Mental Health Research* is a specialized research facility within the Department of Psychiatry and Behavioral Science. It is dedicated to research related to an understanding of psychiatric disorders ranging from basic neurobiological research to applied clinical studies; The *Institute for Technology Policy in Development* is an organized research unit of the State University that works with U.S. and international agencies and developing country counterpart groups to develop new analytic methods to evaluate energy alternatives and to train individuals from developing countries in these techniques. This training is done through a number of training programs such as the Energy Management Training Program supported by USAID and offered in cooperation with Brookhaven National Laboratory; the *Institute for Theoretical Physics* has a faculty of 13 and has guest scientists and visitors numbering about 100 every year, working in various aspects of elementary particle theory and nuclear

theory; the *Institute for Urban Sciences Research*, the research arm of the W. Averell Harriman College for Policy Analysis and Public Management, organizes and carries out research projects and programs on public policy problems and issues; the privately endowed *Institute of American Studies* conducts a summer graduate program for outstanding high school social studies teachers; the non-profit *International Art of Jazz, Inc.* provides concerts, workshops, and an arts-in-education program for elementary and secondary schools throughout New York State, utilizing the art form in non-traditional ways as a medium of communication for intercultural awareness and understanding; the *Laboratory for Behavioral Research* houses experimental, computer-controlled laboratories for the study and analysis of political judgment; the *Laboratory for Energy Technology* performs research on energy conversion, energy conservation, and energy storage systems; the *Laboratory for Personal Computers in Education* explores methods of using microcomputers for providing interactive learning; activities include courseware development, evaluation studies, computers in education courses, and master's degrees; the *Long Island Regional Advisory Council on Higher Education* is a consortium of colleges and universities on Long Island dedicated to improved educational effectiveness through inter-institutional cooperation.

The *Marine Sciences Research Center*, (MSRC) is the center for research, graduate education, and public service in the marine sciences for the entire SUNY system. The MSRC concentrates on the coastal ocean and conducts studies in coastal environments throughout the world. The MSRC operates a fleet of coastal vessels with frequent research cruises in New York's coastal marine waters. The MSRC manages a 146-acre salt marsh preserve, the Flax Pond, and operates the Flax Pond Laboratory; the MSRC operates the nation's first and only Aquaculture and Fisheries

Experiment Station; the *Museum Computer Network*, headquartered on campus, works to help many of the world's major museums and other institutions make their collections and related information more accessible by computerizing museum files and archives; the *Museum of Long Island Natural Sciences*, which houses permanent and special temporary exhibits and has the largest collection of natural history objects on Long Island, is engaged in research and provides programs in Long Island's geological and ecological developments for both adults and school children; the *National Coordinating Center for Curriculum Development's* Minorities in Engineering Project contributes to the nationwide effort to bring the number of minority engineering students up to parity with the population distribution in the college ages; members of the *Nuclear Structure Laboratory* have completed construction of a superconducting linear heavy ion accelerator that is unique among university-based facilities and provides beams for a wide variety of nuclear experiments; the *Research Group for Human Development and Educational Policy* studies student and faculty development as well as academic organization at Stony Brook and other institutions of higher education across the nation, and participates in the implementation of its recommendations; the *Research Foundation* administers grants and contract funds supporting sponsored research, training, and related programs carried out by, or supervised by, University faculty; the *Research Center for Health Promotions/Disease Prevention in Allied Health* was established by the U.S. Public Health Service to create and distribute resources in the Northeast to assist educators and practitioners in maintaining good health and prevention of disease.

The *Science and Mathematics Teaching Center* assists Long Island math and science teachers in curriculum planning and the development of special resource materials; the *Stony Brook Center for Religious Studies* arranges conferences and seminars and offers a setting in which visiting scholars can work. Center faculty are available to supervise research projects or to teach occasional courses in other

departments. The *Stony Brook Foundation, Inc.*, a not-for-profit corporation formed to encourage and accept gifts and endowments in support of University programs, as well as scholarship and loan programs for needy students, also seeks support for University programs that cannot otherwise be supported by the State budget; the *Stony Brook Radiation Laboratory* is an organized research unit in which members work primarily on a variety of problems on the frontiers of nuclear physics and elementary particle physics; the *Sudden Infant Death Syndrome Information and Counseling Center* is a state-funded program through the Division of Maternal and Child Health to assist parents who lose a child to sudden infant death syndrome and to provide community awareness and education about this disease; *Taproot Workshops, Inc.*, a non-profit, countywide center supported by grants from the New York State Council on the Arts and the Suffolk County Legislature, teaches creative writing to elderly people in congregate centers and nursing homes; the *William Butler Yeats Archive* has available for research purposes a comprehensive microfilm collection of Yeats' manuscript materials.

Campus Activities

A wide variety of lectures, seminars, concerts, exhibits, theatrical performances, movies, and sporting events are scheduled regularly during the academic year. Some recent well-known speakers at Stony Brook have included authors James Baldwin, Carlos Fuentes, Czeslaw Milosz, and Isaac Asimov; scientist-writer Paul R. Ehrlich; dancer-actress Gwen Verdon; and civil rights commissioner Mary F. Berry and actor Ossie Davis.

Art galleries in the Fine Arts Center, in the Library, and in the Stony Brook Union offer regularly changing exhibitions of works by on- and off-campus artists. The Museum of Long Island Natural Sciences, located in the Earth and Space Sciences Building, houses a continuous showing of dioramas depicting natural Long Island scenes, as well as special temporary exhibits. An average of five films are shown weekly on campus, including vintage and current productions; usually admission is free


for students. The campus enjoys an average of one classical music concert per day, including student recitals and performances by faculty and visiting artists.

Stony Brook's Fine Arts Center, which opened in 1978, is a fully equipped facility for education in music, theatre, and fine arts, and is already recognized as the most important performing arts center in Suffolk County. It includes one 1,100-seat Main Theatre, a 400-seat Recital Hall, three experimental theatres, and a 4,700-square-foot Art Gallery. These facilities are used jointly by the professional artists, musicians, dancers, and theatre groups who are part of the subscription series offered each year at the Fine Arts Center, and by the art, music and theatre students at Stony Brook.

The Fine Arts Center schedules more than 50 major events during the year. In addition, more than 200 recitals and concerts are given which are open to the public with no admission charge. Highlights of the past season include performances by Jessye Norman, The Royal Ballet of Flanders, the Beaux Arts Trio, the Guarneri String Quartet, as well as performances by the Stony Brook Concert Band, Chamber Symphony and Symphony Orchestras, Chamber Singers, Gospel Choir, and University Chorus and productions by the Department of Theatre Arts' University Theatre.

Besides the free concerts, special student discounts are available and an arrangement has been made for students to purchase tickets for Main Theatre events which are not sold out. "Student rush" tickets are \$3, and go on sale a half-hour before curtain time. The Fine Arts Center provides the social atmosphere for a large university where the campus community—undergraduates, graduate students, faculty, and staff—can mingle with the hundreds of residents who come from a broad area around the University to enjoy and applaud a growing list of exciting events.

Popular student-sponsored concerts have featured the Ramones, Cyndi Lauper, Lou Reed, Zebra, Elvis Costello, Frank Zappa, and Santana in recent months.



Polity, the undergraduate student organization, and its related groups, particularly the Student Activities Board, sponsor many campus activities. Polity presently funds more than 75 student interest clubs and organizations that in many cases complement students' academic work. Varied student interests are represented by groups as diverse as the Pre-Med Society, Stony Brook Karate Club, Cycling Club, Committee on Cinematographic Arts (COCA), Drama Club, Psychiatric Hospital Volunteers, Irish Club, and Science Fiction Forum.

Stony Brook fields varsity teams in 20 intercollegiate sports competing through the National Collegiate Athletic Association (NCAA), the Eastern Collegiate Athletic Association (ECAC), and the Association for Intercollegiate Athletics for Women. The year 1983 saw the addition of men's lacrosse and football and women's soccer to the ranks of Division III teams. The 1982-83 men's swimming team produced four All-Americans, the women's swim team one, and the 1983 women's cross-country team its first.

The campus student newspaper, *Statesman*, is published weekly during the academic year with a circulation of 10,000 on campus and in the local community. Other student publications include the *Stony Brook Press*, a student weekly; *Black World*, a newspaper focusing primarily on news of interest to the black community on campus; *Soundings*, a literary magazine; and *Specula*, the campus yearbook.

Campus ministries serve student religious concerns through the Interfaith Center, offering regularly scheduled Jewish, Catholic, and Protestant services and activities which are open to all. Religious and personal counseling services for students of these and other denominations are also provided through the Interfaith Center. The Catholic ministry offers religious and

social services and activities in a Catholic "parish" atmosphere for the campus community. United Protestant Campus Ministry at Stony Brook is the ministry of five Protestant denominations in the Stony Brook area (Episcopal, Methodist, Reformed, Presbyterian, and United Church of Christ) and is the regional ministry of L.I. United Campus Ministries, Inc. The Protestant Chaplain offers a ministry of worship services, counseling, programs, social action, and retreats. The B'nai B'rith Hillel-Jewish Association for College Youth offers religious, social, and cultural services as well as personal counseling for students and faculty. It is the umbrella organization for all the Jewish activities at Stony Brook.

The International Student Organization meets student interests in various cultural traditions, as do other groups including the Asian Student Association, India Association, African Students Association, Latin American Student Organization, and Caribbean Association.

Campus and Community Ties

As the public university center for the biconity-metropolitan New York region, Stony Brook plays a major role in the Long Island community. With more than 6000 people (full-time and part-time) on a campus payroll exceeding \$100,000,000 annually, Stony Brook is Long Island's fifth largest employer. It is estimated that the University generates more than a half-billion dollars annually in direct and indirect economic impact on the region. In addition to its function as a major research facility and source of advanced and specialized instruction, the University provides a social and cultural center for Long Island, state-of-the-art health care, recreational opportunities, and a broad range of other services for individuals and groups in the public and private sectors.

Designated by the Governor as a Center for Advanced Technology in medical biotechnology, the University offers State matching funds to companies supporting research in relevant fields. Through the College of Engineering and Applied Science's Center for Industrial Cooperation, the University makes technical and academic resources available to serve



the high technology and other industries that form Long Island's economic base; the W. Averell Harriman College for Policy Analysis and Public Management plays a similar role in providing services for the public sector, and the Marine Sciences Research Center responds to the environmental, fisheries and other needs of a coastal region that includes one of the world's great harbors.

Suffolk County's only tertiary care facility, University Hospital offers a developing range of sophisticated regional specialty services, logging more than 65,000 ambulatory care patients in 1984, in addition to inpatient services. Clinical services are also provided by the specialized centers operated by the School of Dental Medicine and the Departments of Psychology and Psychiatry and Behavioral Science. In 1984 more than 400 community volunteers logged 50,000 hours of assistance. Additionally, a thousand or more Stony Brook students annually participate in community volunteer programs in tutoring, recreation, health care, and other areas.

Regional business and civic leaders help guide the Stony Brook Foundation, the University's independently-incorporated development arm, and community members with special interests in campus programs participate in the Association for Community-University Cooperation, the Friends of the Fine Arts Center, the Friends of Sunwood, and the University Hospital Auxiliary. In addition to the University's many degree programs, there are broad opportunities for credit-bearing and non-credit instruction for individuals pursuing specific, limited objectives or seeking personal enrichment.

Several hundred concerts, lectures, films, theatre productions, art exhibits, and sports events on the campus are

open to the public each semester, many at no charge, and it is estimated that hundreds of thousands of persons annually attend these events or visit the campus to take advantage of other facilities and services.

Student Service Information

The Center for Academic Advising

The Center for Academic Advising, located on the third floor of the Frank Melville, Jr. Memorial Library, provides academic advising to all undergraduates. Advisors are available on a walk-in basis during normal business hours each weekday. They help students to plan their academic program, select courses, and check progress toward graduation. They also explain academic regulations and advise students who seek exceptions to those rules. The Center provides information and referral for all academic programs and services. Any student experiencing academic difficulty should come to the Center and speak to an advisor.

Engineering Undergraduate Student Office

The Engineering Undergraduate Student Office administers the College of Engineering and Applied Sciences undergraduate academic programs and coordinates undergraduate academic advising. It publishes advisory materials including the major requirements for all academic programs, the College distribution requirements, and requirements for admission to its majors. It receives student petitions and grievances and advises students of administrative procedures.

Health Services

The University Health Service, located in the Infirmary, concerns itself with student health needs. It is available to faculty and staff on an emergency basis. The University Health Service hours of operation are Monday through Friday 8 a.m.-6 p.m. At other times, students are requested to use the Emergency Department of University Hospital on a fee-for-service basis; therefore, adequate health insurance is important. Information on University-sponsored student health insurance is available at the Infirmary Building. The Walk-in Clinic is staffed by physicians, physician assistants, and nurses.

Speciality services, for psychiatric, gynecological, or dermatological problems are also available. For further information or help, call the Infirmary at 246-2273 (6-CARE).

Student Affairs

The Student Affairs Division comprises six major divisions: Career and Developmental Services (Career Development, Office of the Disabled, Veterans Affairs); Enrollment Management (Admissions, Health Sciences Center Student Services, New Student Programs, Records/Registrar, Financial Aid, and Student Employment Office); Residence Life; Stony Brook Union and Student Activities; and the University Counseling Center. Several of these offices are located outside of the Administration Building, yet they all report to the Vice President for Student Affairs, 348 Administration. The Student Judiciary is also located in and is supervised by this office.

In addition, the office serves as a student referral and information center for campus resources.

Residence Life

The Office of Residence Life is committed to providing quality housing and educational service to its resident students. The residence halls on campus house 60 percent of the undergraduate students. Forty professional residence life staff members, assisted by approximately 250 student staff members, help students structure their experience within the framework of the overall residence life program. The emphasis on developing student responsibility is intended to promote standards that encourage personal growth and a rewarding living experience.

The residence halls are organized as small residential colleges in order to foster social, intellectual, and cultural interaction. Each residence hall is supervised by a residence hall director. The RHD tries to establish an environment that fosters the academic and personal growth of the resident students. He or she serves as an advisor to the college legislature (student council), provides personal counseling, supervises the student staff, and promotes educational programs (i.e., study skills workshops, guest lecturers, resume writing workshops, etc.). The student staff members of

each residence hall serve as peer advisors, stimulate social and educational programs, report maintenance concerns, and provide important information regarding campus programs and policies to the resident students.

The residential colleges, each housing approximately 220 students, are arranged in quadrangles. Each quadrangle has a unique atmosphere and personality. An example is Stage XII Quadrangle where some of the students from other countries and widely differing American subcultures learn firsthand how to integrate their diverse backgrounds into a true community.

Several quadrangles have dining halls. Freshman and transfer students living on campus must participate in one of the meal plan options during their first year. Each residential college has public lounges, laundry rooms, kitchen facilities, and recreational facilities. A variety of student-operated businesses like Harpo's Ice Cream Parlor and the Hard Rock Cafe are located within the residential colleges.

A large percentage of the on-campus activities takes place within the residence halls. College Legislatures are student councils within each building empowered to spend the monies allotted by Polity, the undergraduate student government. College Legislatures and the residence life staff plan numerous social and educational activities including hall dinners, movies, costume parties, guest speakers, dance workshops, academic and career information sessions, and study skills workshops.

Quad Councils are student programming boards that plan activities that are open to all residents of a particular quadrangle. These groups sponsor large quad parties, barbecues, film series, olympic competition, community development projects, and many other programs. Another student group, the Residence Hall Association, addresses important issues that are of concern to quad residents. Students are encouraged to become active members of the organizations.

The Harry Chapin Apartment Complex is designed to house graduate, married, and health sciences students. Single parents with children are also eligible to apply for accommodations. The apartments have one, two or three bedrooms, a kitchen, living room, and bathroom. All apartments are furnished. Agreements are made on a 12-month basis. The cost varies depending on the size of the apartment and the number of occupants.

Information regarding Residence Life programs and procedures for applying for housing can be obtained by writing to the Residence Life Office, 138 Administration Building or by calling (516) 246-7006.

Off-Campus Housing Service

An off-campus housing service is available to assist students in finding off-campus living arrangements. This service, including listings for available facilities and tenant information, can be obtained by visiting the Off-Campus Housing Office.

The Commuter College

The Commuter College, located in Room 080 of the Stony Brook Union, is the central activities facility for commuting students. Commuters as well as other members of the University community can find there a comfortable environment in which to relax, study, or to meet old and new friends. In addition, a variety of services are available to everyone including a typing room, indoor recreational facilities, and a video entertainment lounge. The Commuter College sponsors campus events such as films, holiday parties, and theatre and ski trips. Often, special events are offered at reduced rates for commuters. Commuters can find the Commuter College to be a productive center for information exchange, campus-based social life, the development of study groups, access to student government and organizations, and the enrichment of the experience of being an active Stony Brook commuting student.

University Counseling Center

The University Counseling Center provides crisis intervention and individual and group counseling for full-time students. Counseling Services are available year-round including school vacations. A student does not

have to be confronting desperate or overwhelming difficulties in order to benefit from a counseling relationship. Understanding a situation before it reaches the crisis state often allows for greater freedom when making choices. The Center staff encourages students to come in and talk, even if they are not sure that counseling is what they need. With a counselor's help, they can discuss alternatives and decide the best way to proceed.

Students can be seen for an initial visit between 10 a.m. and 3 p.m. This is a walk-in service and no appointment is needed. During the first visit, the student and counselor together make an assessment of the situation and decide how best to deal with it.

Sometimes the best course of action includes a referral to another service, either on or off campus. Occasionally, the one session proves sufficient. Most often, the student decides to see a University Counseling Center counselor on an ongoing basis, usually once a week for two or three months. If that is the case, arrangements are made for sessions to begin as soon as possible.

All counseling services are confidential. Counseling Center policy prohibits the release of information concerning a student to anyone without the student's explicit written authorization.

In addition to offering assessment, counseling, and psychotherapy, the Center also provides programs for personal growth and enrichment. Each semester, though the Group Shop Program, a series of stimulating and diverse workshops and groups are offered to the University community, free of charge. Some of the most popular workshops are stress management, weight reduction, interviewing for success, assertion training, and study skills. The Counseling Center also works with ongoing orientation programs for minority freshmen and transfer students such as the Sis/Bro Peer Counseling Program.

The Counseling Center is located on the second floor of the Infirmary Building. For further information, please call 246-2280/81/82.

The Returning Student Services Network

The Returning Student Services Network is a support system for undergraduate students 25 years or older. Many key offices on campus have designated special advisors to offer information and assistance to returning students. The Network also sponsors programs for older students such as a special orientation session, workshops, a newsletter, a student club, and a lounge.

Career Development Office

The Career Development Office of the Student Affairs Division of Career and Developmental Services assists students and alumni with all types of career planning concerns while acting as a resource for information on full-time permanent employment. Individual and group consultation with students is emphasized while periodic critical self-examination assists students in relating academic expertise to aspirations for future professional involvement and advancement. A computerized guidance service, DISCOVER, is also available for students to utilize as part of their career decision-making process.

An on-campus recruitment program permits interested seniors and graduate students to meet with prospective employers and graduate school representatives, and a credentials service is provided to support students in their application for jobs or advanced study. These records are maintained permanently.

Students are encouraged to participate in the Student Volunteer Service Program (VITAL), in which experience in specific career areas is received by working with agencies and institutions seeking student volunteers. A three-credit course on Career and Life Planning, INT 200, is taught by the office and is open to undecided sophomores, with permission of the instructor.

Group workshops are held to assist students and alumni in writing resumes and developing job search strategies. As part of the Career Development Office's Out-Reach Program, visits are made by the career counselors to residence halls and campus departments in order to provide a broad exposure to career-related information on a special request basis.

The Career Development Resource Library has information pertaining to employment opportunities in areas such as business, government, social service, and education. Relevant materials are available on career planning, teaching certification, health careers, graduate and professional school admissions testing, graduate school and financial aid information, and recruitment options.

Other services offered include information and applications for examinations required by various graduate and professional programs (i.e., the GRE, LSAT, GMAT, DAT, NTE, Actuarial Exam, MCAT, TOEFL, OAT, AHPAT, and Pharmacy Test), and a library of taped descriptions of various careers by people actually engaged in the careers being discussed.

It is suggested that students visit the Career Development Office and become familiar with the services it provides. The office, located in the Library Building, Room W-0550, is open weekdays from 8:30 a.m. to 3 p.m. Its telephone number is 246-7023, 7024.

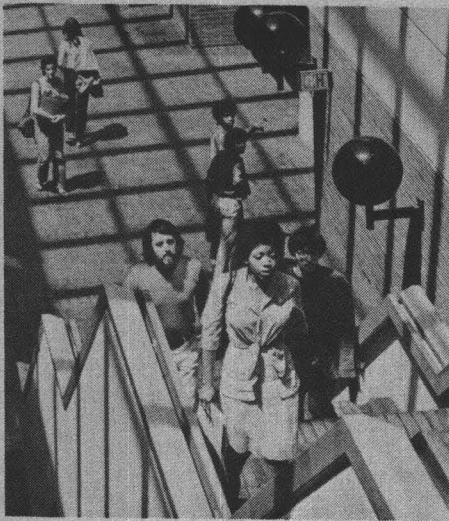
Veterans Affairs

The Office of Veterans Affairs, operating within the Student Affairs Division of Career and Developmental Services, provides counseling and advisement to veterans and eligible dependents of veterans. Students seeking information regarding educational assistance or other programs, issues, and/or legislation affecting veterans are urged to contact that office as soon as possible.

The Office, located in Room 130 of the Humanities Building, is open Monday, Tuesday, and Friday from 1-5 p.m. and Wednesday and Thursday from 8:30 a.m. to 12:30 p.m. The telephone number is 246-7012.

Foreign Student Affairs

The Office of Foreign Student Affairs is that part of International Programs which counsels students from other countries concerning finances, housing, government regulations (including immigration and tax concerns), cross-cultural differences, and other general matters. Questions relating to academics are usually handled by academic advisors within the individual's school or department. The foreign student affairs staff works with



community groups and student organizations to provide access to a varied program of activities during the year, including tours and trips, discussion groups, home hospitality, speaking engagements, and other events. The OFSA publishes a handbook and four newsletters each year and supervises the International Reading Room, a lounge that contains books, magazines and newspapers from all over the world. The Foreign Student Advisor is the responsible officer for F-1 visas on campus.

English as a Second Language

This program includes diagnosis and testing as well as classes aimed at raising students' ability to understand, speak, read, and write standard English to the level of United States college students.

American Living Institute

Stony Brook offers a "Summer Institute in American Living," a program of courses and activities in American language and culture designed to meet the separate and special needs of foreign scholars. Participants in the Institute attend classes, visit American homes, and join excursions to urban, suburban, and rural places of cultural and historic interest. Admission is open to all foreign students who have attained a high school education or its equivalent and to spouses accompanying them.

Upward Bound

The Office of Upward Bound administers a compensatory education program for high school students from eastern Suffolk County. The purpose of the program, which includes a summer residential component, is to motivate and prepare high school students to go on to some form of postsecondary education.

Campus Judiciary Office

The Campus Judiciary Office administers the University Student Conduct Code, the regulations and procedures for student discipline in nonacademic matters.

Office of the Disabled

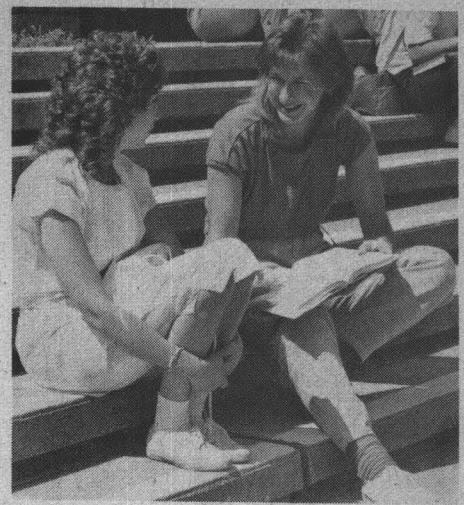
The Office of the Disabled of the Student Affairs Division of Career and Developmental Services, coordinates services to disabled students and will assist them in application to the University, admission, and orientation procedures. (The academic admission requirements and procedures for disabled students are the same as for all other applicants.) The Office will also assist in the following areas: housing, meal plan, medical assistance (coordination with the Director of the University Health Service), academic needs and progress, special parking permits, facilities, financial aid information, and transportation.

A small Center for the Disabled, located in the Reserve Room of the Melville Library, emphasizes service to visually and physically disabled students and faculty. The Library also offers extra services such as special study carrels and a paging service in the stacks for disabled students.

It is strongly recommended that after admission, students who are disabled identify themselves prior to the start of classes. These students should call 246-6051. An early start will permit the evaluation of possible problems and will provide time to work out solutions.

Child Care Services

The University has day care services for children ranging in age from two months to five years. There are three on-campus facilities staffed with professionals who are assisted by students enrolled in coursework practice. Each of the three centers specializes in a particular age group and curricular approach. The centers are open from 7:30 a.m. to 5:30 p.m., and fees are charged on a sliding scale.



Equal Opportunity and Affirmative Action

The State University of New York at Stony Brook does not discriminate on the basis of race, religion, sex, sexual preference, color, national origin, age, disability, marital status, or status as a disabled or Vietnam-era veteran in its education programs or employment.

Discrimination is unlawful. If you are a student or an employee of SUNY at Stony Brook and you consider yourself to be the victim of illegal discrimination, you may file a grievance in writing with the Affirmative Action Office within forty-five (45) calendar days of the alleged discriminatory act. If you choose to file a complaint within the University, you do not lose your right to file with an outside enforcement agency such as the State Division of Human Rights or Equal Employment Opportunity Commission.

Any questions concerning this policy, or allegations of non-compliance, should be directed to:

Ms. Marion Metvier,
Special Assistant to the President
for Equal Opportunity and
Affirmative Action
474 Administration Building
SUNY at Stony Brook
Stony Brook, NY 11794-0251
Phone: (516) 246-3462

Maintenance of Public Order

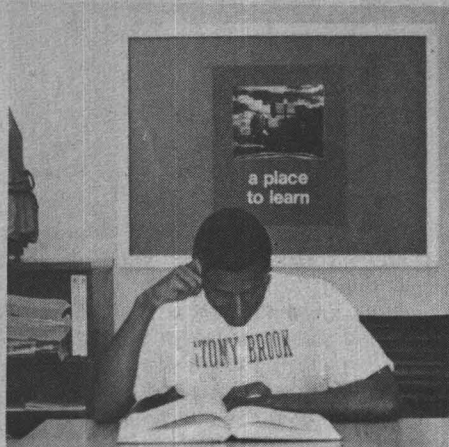
The University wishes to maintain public order appropriate to a university campus, without unduly limiting or restricting the freedom of speech or peaceful assembly of the students, faculty, or administration. First Amendment rights shall be supported, subject only to reasonable time, place, and manner restrictions. The State University Board of Trustees' Rules for the Maintenance of Public Order (Part 535 of Title VIII—Compliance of Codes, Rules and Regulations of the State of New York) is printed in the Student Handbook and Student Conduct Code brochure, both of which are available in the Office of the Vice President for Student Affairs, 348 Administration.

Parking and Traffic

Regulations have been established to govern vehicular and pedestrian traffic and parking on highways, streets, roads, and sidewalks owned, controlled, or maintained by the University. These regulations apply to students, faculty, employees, visitors, and all other persons upon such premises. The detailed regulations and appeal procedures are available in the Department of Public Safety, Room 192, Administration Building.

Student Conduct Code

The University recognizes that students have, within the law, rights of free expression and advocacy, and seeks to encourage and preserve these freedoms within the entire University. Inherent within this broad policy is the obligation of all students to conduct themselves lawfully, maturely, and responsibly. To this end, the University has established the University Student Conduct Code which sets forth detailed regulations for conduct and disciplinary proceedings. These regulations recognize the need for due process and procedural fairness prior to the imposition of disciplinary action. For further information and to obtain a copy of the Code, contact the Office of the Student Judiciary, Room 347, Administration Building.



Admission

The information in this chapter refers only to undergraduate admission to the Colleges of Arts and Sciences and of Engineering and Applied Sciences. (A section of particular importance to students interested in the latter College appears on p. 20.) Students who seek admission to the W. Averell Harriman College for Policy Analysis and Public Management should contact the College's main office, 314 Old Physics; students beginning the program must have completed at least two years of college. Transfer students and current Stony Brook students who seek admission to any of the undergraduate programs in the Health Sciences Center should consult the Health Sciences Center section in this Bulletin and the separate Health Sciences Center Bulletin. All undergraduate Health Sciences Center programs begin in the junior year. Freshman applicants interested in conditional acceptance to programs in the Schools of Allied Health Professions or Nursing should see also p. 16 of this chapter.

Freshman Admission

General Information

The strength and breadth of a student's academic preparatory program are the basic criteria for admission to Stony Brook. Such a program will include, at a minimum, three years of mathematics (i.e., elementary algebra, geometry, and intermediate algebra and trigonometry), three years of foreign language, three years of science (with biology and chemistry as part of the sequence), three years of social studies, and four years of English, including development of the ability to express ideas clearly and logically in writing. Students intending to enter an engineering, mathematics, or natural or health sciences program should complete four years

of high school mathematics (usually including pre-calculus or calculus), and a year each of chemistry and physics. Those who expect to major in a social or behavioral science (e.g., economics, psychology, sociology) should also complete four years of mathematics.

Other measures used in determining admissibility to the University include an unweighted average earned in a strong academic program in high school; completion of honors, enriched, Regents, or advanced placement courses; class rank; and Regents examination scores where appropriate. A Regents or high school diploma (academic or college preparatory) is required. Scores on standardized tests (SAT or ACT) are also required and will be taken into consideration. (Students with outstanding high school records are eligible for the University Scholars and Scholar Incentives Programs; see below.)

Stony Brook offers several special admissions programs for freshmen and transfer students; these are described on p. 19 and following. They include *Advancement on Individual Merit* (AIM, an Educational Opportunity Program), *Exceptional Talent or Ability* (for certain categories of high school students), and *Returning Students* (for applicants who are 25 years of age or older).

University Scholars Program

Students selected for the Scholars Incentive Program (described below) are eligible for consideration by the Selection Committee to receive a \$1,000 University Scholarship upon enrolling at Stony Brook and each year thereafter for a total of \$4,000, providing required academic achievement is maintained. The University Scholarship winners will be notified by mid-January, and must advise the University of their acceptance of the Scholarship by the date announced in the

notification letter. These scholarships are made possible through a special fund provided by a bequest of Cecil L. and Claire D. Hall and gifts from Leonard Spivak (Class of 1964) in memory of his parents, Esther and Jack Spivak, and the Republic Aviation Corporation.

University Scholars and their parents are invited to the campus for a special program in late February. A luncheon, meeting with Stony Brook's President John H. Marburger, discussions with faculty in areas of interest to Scholars, and campus tours are included in this February visit.

Further information about the Scholar Incentives and University Scholars Programs is available from the Undergraduate Admissions Office.

Scholar Incentives Program

Students who have achieved exceptionally high grades in Regents or other academic courses (English, foreign languages, mathematics, sciences, and social studies) are good candidates for the Scholar Incentives and University Scholars Programs. Also, strong candidates will have earned outstanding (SAT or ACT) test scores. Advanced placement enriched, or otherwise accelerated curricular achievement will be given special consideration as being indicative of the strong intellectual motivation expected of Program participants. Distinctive achievements in the fine arts, special honors and awards, and recommendations will also be examined. To determine eligibility for the program, applications are reviewed as they are received. All qualifying applicants will receive a formal offer of admission no later than mid-January. Applicants who do not receive notification by mid-January may assume that their applications arrived too late or they did not qualify.

Eligible students for the Scholar Incentives Program will have an opportunity to work with other outstanding students and University faculty members in freshman seminars, honors courses, and



subsequently, in research and creative projects in the academic discipline of their choice. When successful applicants accept the offer of admission, the University will provide these new students with an advisor in their area of interest so that they may begin planning an academic program, even before high school graduation.

Students in this group who are applying for financial aid will be provided with an estimate of their eligibility within two weeks of the Financial Aid Office's receipt of appropriate forms and documents. They will also receive early consideration for campus-based federal aid programs such as National Direct Student Loan (NDSL), College Work Study (CWS), and Supplemental Educational Opportunity Grant (SEOG).

While returning resident students are given priority for residence hall space, acceptance through the University Scholars and the Scholar Incentives Programs assures participating students double room accommodations and gives their preference first priority for on-campus housing ahead of all other new students. Program participants are exempt from the radius policy that restricts housing to students who live more than 15 miles from the campus.

Early Admission to the Schools of Allied Health Professions and Nursing

Stony Brook's Schools of Allied Health Professions and Nursing offer to a limited number of well-prepared freshmen conditional admission into their professional majors. During their first two years, students accepted into this program take one or two pre-professional courses in addition to the entrance requirements.

Applications are available in the guidance offices in all secondary schools in New York State. Applications for transfer and out-of-state students are also available from: the Undergraduate Admissions Office, State University of New York at Stony Brook, Stony Brook, NY 11794-1901.

* Provided with each application for admission are complete instructions and an envelope for mailing it to the Application Processing Center (APC) in Albany, New York.

Early Admission from High School

While the University does not actively seek students who do not expect to complete all requirements for either a Regents or high school diploma before matriculation at college, such applicants are routinely reviewed and offered admission when other admission requirements are met. Applicants for early admission must submit a letter of support from their high school principal with their applications. It is more common, however, for advanced high school students to remain enrolled in high school, where they follow an academic program that includes both high school and approved college courses.

Application Procedures for New Freshmen

Freshmen are admitted to the University rather than to a particular program. Students considering engineering or computer science programs should indicate their interest on the admission application. For additional information about acceptance to major programs within the College of Engineering and Applied Sciences, see p. 198.

All applicants must submit a completed "Application for

Undergraduate Admission" available with instruction booklet and return envelope in New York State high school guidance offices or from the Undergraduate Admissions Office, State University of New York at Stony Brook, Stony Brook, NY 11794-1901. All applications are to be sent to the Application Processing Center (APC) in Albany and are then forwarded to Stony Brook. Candidates for admission in either spring or fall semester are encouraged to file their applications early in the fall.

Notification of Freshman Admission

Fall Semester

High-achieving applicants for admission to the fall semester are notified of the decision as soon as all required information or pertinent documents have been received and reviewed. All other applicants for admission to the fall semester are notified of the admissions decision beginning February 15.

Spring Semester

Applicants for admission to the spring semester are notified of the decision as soon as all required information or pertinent documents have been received and reviewed.

Deferred Enrollment

Stony Brook permits a limited number of admitted freshmen to defer enrollment for a semester or a year. The University expects such students to use this opportunity to travel, work, perform service, or otherwise enrich their life experience through activities other than formal academic endeavor within the United States. Applicants granted deferred enrollment who subsequently seek to transfer credit earned at institutions within the United States during the year of their absence void the University's responsibility to reserve a place for them at the time agreed upon for their enrollment. Their status then changes to that of transfer students and they must file new applications in competition with

all other transfer applicants. Completion of coursework in institutions of higher learning outside the United States, while acceptable in the spirit of this policy, would be considered more valuable when used as a supplement to non-classroom activities.

Since it is the student's responsibility to return to the University at the beginning of the semester following completion of the year of deferred enrollment, the University's obligation to reserve a place terminates at that time. A student would then have to file a new application for subsequent consideration.

Instructions for applying for deferred enrollment are mailed with the offer of admission. Applications must be received in the Undergraduate Admissions Office by May 1. Decisions will be rendered by June 1 to all who requested consideration. Students offered admission after May 1 may be considered for deferred enrollment should any spaces still be available. Applications for deferred enrollment will not be considered after the first two weeks of classes.

Transfer Student Admission

General Information

Stony Brook encourages application by transfer students and urges them to acquaint themselves prior to transfer with the University's requirements for admission, as well as the requirements for their intended majors. The University has found that transfer students who have carefully examined its probable academic expectations make a smoother transition than those who have not done so. Graduation requirements for the College of Arts and Sciences appear on p. 51, and for the College of Engineering and Applied Sciences, on p. 198. Requirements for individual majors appear in the alphabetical listings in the chapter devoted to each of the colleges. While, in most cases, credits taken previously will transfer to Stony Brook for distribution requirements, they do not necessarily fulfill *all* these requirements. Moreover, not all transferred courses

may be accepted by a department toward fulfillment of major requirements. (See Transfer Credit Policies, p. 19.)

Two of Stony Brook's special admissions programs are applicable to transfer students. These are *Advancement on Individual Merit*, an Educational Opportunity Program (see p. 19) and Returning Students, for applicants who are 25 years of age and older (see p. 20).

Distinguished Transfer Scholars and Incentives Program

Transfer applicants who are highly motivated and find a rigorous academic setting to be stimulating will be considered for the Distinguished Transfer Scholars and Incentives Program (DTSIP). This new program was created to give prospective transfer students recognition for prior academic excellence and, through scholarships and other benefits, reward outstanding achievement.

Program benefits for all participants include a personal faculty advisor, an open house and early Orientation program, early evaluation of previous college credits, early estimate of financial aid eligibility, and priority for on-campus housing ahead of all other new transfer students.

The strongest applicants admitted to the University through the Distinguished Transfer Scholars and Incentives Program will be awarded a scholarship on enrolling at Stony Brook, payable at the beginning of each semester in the amount of \$500, for an annual total of \$1,000. Scholarship recipients are designated Distinguished Transfer Scholars and their scholarships are renewable for the second year of study provided minimum academic standards established for the Program are met.

In addition to awarding a select number of annual scholarships, the University will grant a limited number of book awards to other outstanding transfer students. Each book award totals \$200 and will be distributed in the amount of \$100 at the beginning of

each academic year for two years to help defray the cost of new books.

A regular State University of New York admissions application filed early for the fall semester is the first step in seeking admission to the Distinguished Transfer Scholars and Incentives Program. No special application is necessary. The standard application for admission to Stony Brook for the fall semester and official transcripts from all colleges previously attended must be received in Stony Brook's Office of Undergraduate Admissions no later than April 1 to be eligible for consideration for the Program. Applications are reviewed as they are received and each qualifying applicant is notified as soon as identified, through April 15. The highest achievers, eligible for a \$1,000 a year scholarship for two years, and those eligible for book awards are selected in mid-April and notified by mail.

All students admitted through the Program must pay tuition and housing (if requested) deposits in early May. Those not responding by the date specified in the notification letter will forfeit Program benefits even if they decide subsequently to enroll. Program recipients who pay deposits by the date specified are eligible for a full refund until mid-June, if they decide not to enroll.

Further information about the Distinguished Transfer Scholars and Incentives Program is available from the Undergraduate Admissions Office.

Application Procedures for Transfer Students

A substantial number of students enter Stony Brook as transfers from other American and foreign colleges and universities each semester. Any student who has been registered previously (summer and part-time study included) at an educational institution since graduating from high school must apply as a transfer student. If no grades were earned, a statement of attendance and honorable dismissal is required. A grade point average of 2.5 (A=4.0) is usually the lowest base considered for transfer. In addition to completing the application, transfer students must submit an official transcript from each post-secondary institution attended. High school transcripts should be forwarded to the Undergraduate Admissions Office, as the Arts and Sciences mathematics

and foreign language proficiency requirements may be satisfied by either third-year high school Regents Examinations scores (75 or more) or College Entrance Examination Board Achievement Test scores (525 language, 550 mathematics).

In order to provide adequate time for processing, applicants for the spring semester are encouraged to file an application by October 15. Applicants for the fall semester are urged to file their applications by February 1 to maximize their chances of obtaining scarce on-campus housing.

Notification of Transfer Admission

Transfer applicants for admission in the spring or fall semester are notified of the admissions decision as soon as all their application materials have been received and reviewed.

All offers of admission are conditional, pending receipt of official records showing successful completion of academic work in progress. A significant drop in grades will necessitate a review of the application and may result in withdrawal of the offer of admission. When an admitted transfer student's index for the semester immediately preceding registration falls below 2.5 (A=4), the student is advised to contact an admissions counselor as soon as possible to help resolve potential difficulties.

In all cases it is the student's responsibility to see that a final college transcript is sent to the Undergraduate Admissions Office. Community college applicants who expect to be degree recipients (A.A. or A.S.) must present evidence of receipt of the degree prior to enrollment. Also, *all* transfer students must present a final transcript to the Stony Brook Admissions Office *prior* to final registration. Requirements for an authorization to register and completion of registration (including a medical report and payment of necessary deposits) are explained with the offer of admission.

Two-Year College Graduates

The University is committed to offering admission to qualified graduates of



university-parallel programs, i.e., A.A. and A.S. degree recipients from community and agricultural and technical colleges within the State University of New York. Such students will be given preference, although not necessarily in the program of their choice, if the number of applicants necessitates establishing priorities.

In order to prepare for a smooth transition to Stony Brook after completing the associate's degree, two-year college students should choose their courses with some knowledge of the requirements of the bachelor's-level program they plan to complete after transfer. Associate degree candidates who wish to plan their studies as the first half of a continuous four-year program should discuss this with their academic advisors. To assist in this planning Stony Brook routinely prepares tables of course equivalents for SUNY's two-year colleges on Long Island. Jointly prepared advisory materials are also available for many Stony Brook majors. Advisory information to assist students at other State University two-year colleges in advance planning is available upon request. Graduates of career-oriented programs (A.A.S.) will be considered for admission on an individual basis and in competition with other transfer applicants.

To facilitate students' transfers from community colleges to Stony Brook and to maximize the University's service to these applicants, Stony Brook strongly encourages two-year college matriculants to file applications in the fall of their sophomore year for the following fall semester. Such early

application will make possible early decisions, enabling more transfer students to participate in Orientation and advance registration and expand consideration for financial aid. The University is prepared, therefore, to render decisions to two-year college matriculants on the basis of two semesters of full-time work at the two-year college, since its offer of admission is conditional on the student's final transcript showing a grade point average achievement of 2.5 (A=4) or higher or award of the Associate in Art or Associate in Science degree. (Applicants for admission to the spring semester are encouraged to file soon after new applications become available in September.)

Transfer Credit Policies

1. All credits earned at previously attended accredited institutions are accepted for transfer and will be applied toward the total required for graduation.
2. Students will be classified according to the following schedule of semester hours accepted for credit: freshman, 0-23; sophomore, 24-56; junior, 57-84; senior, 85 or more.
3. Courses satisfactorily completed in the intended major or needed to fulfill the 39 upper-division credits requirement are evaluated by the appropriate academic department for specific applicability. No transfer course with a grade lower than C may be counted among the 39 upper-division credits. Forms for requesting the evaluation of specific courses for major or upper-division credit are available at the Undergraduate Admissions Office and in the Engineering Undergraduate Student Office. Any applicant who has completed college-level study at an institution outside of the United States must request an evaluation of each course.
4. Credits earned at community and agricultural and technical colleges will usually be considered lower-division credit with the exception of two-semester courses of organic chemistry with

laboratories, and a few other courses recommended by an academic department and approved by the College of Arts and Sciences, and certain engineering courses determined by the College of Engineering and Applied Sciences.

5. Transfer courses are reviewed by the Undergraduate Admissions Office individually for their applicability toward fulfillment of distribution requirements. Since distribution requirements differ from college to college, having satisfied them at a previous college does not guarantee that all of Stony Brook's distribution requirements will have been met with transfer courses.
6. Transfer credit will be entered on the official University transcript with the understanding that neither previous grades nor cumulative averages will be shown. Students wishing additional information should consult an admissions counselor.

Special Admissions Programs

Advancement on Individual Merit (A.I.M.): An Educational Opportunity Program

The A.I.M. Program has the responsibility of providing access to the University for New York State residents who are economically and educationally disadvantaged, and who have a potential to succeed academically at Stony Brook. Program services are designed to promote each student's individual academic development.

On acceptance by the A.I.M. Program, each student is assigned to a professional counselor who provides academic advisement and encourages academic achievement. Most A.I.M. Program students are encouraged during their first year to enroll in either *AIM 102 Textual Analysis* or *AIM 103 The Learning Process*, which are offered each semester through the Program. A.I.M. Program students are provided tutorial assistance in academic subjects and are encouraged to use all academic support services available through the Program or other University offices.

Entering freshmen students admitted through the A.I.M. Program are invited to attend an intensive six-week summer

session, which is designed to enhance academic skills and better prepare them for the rigorous academic atmosphere that they will be entering. Students who attend the summer sessions tend to do better academically during their freshman year than students who are not able to attend.

To be considered for admission to the University through the A.I.M. Program in 1984-85, applicants had to be within the following economic eligibility parameters:

<i>Number of Dependents in Household (including head of household)</i>	<i>Gross Family Income</i>
1	\$7,000
2	9,200
3	11,500
4	14,200
5	16,700
6	19,400
7	22,000
8	24,200
9 or more*	26,700

*Add \$2,000 for each family member in excess of 9.

All applicants for admission through the A.I.M. Program must also be academically eligible for acceptance at the time of application. To be academically eligible, applicants must normally meet one of the following criteria:

1. High school average below minimum for regular admission to the University
2. SAT verbal and mathematics scores below 450 or 400 respectively
3. Attendance at a vocational high school or enrollment in a vocational or general program in a comprehensive high school
4. Substantial documented evidence of a need for academic support services.

Transfer students applying for admission must have been enrolled in EOP, HEOP, SEEK, or a similar support program at their previous college, unless none existed at the time the student entered.

Students wishing to apply to the University through the A.I.M. Program

should contact their school guidance office, the A.I.M. Program Office (516) 246-4016, or the Undergraduate Admissions Office. Applications should be on file in the A.I.M. Program Office by January 5 for admission in the fall semester. Students interested in admission for the spring semester should contact one of the aforementioned offices.

Exceptional Talent or Ability

Limited opportunity is provided for admission of students who have a good probability of succeeding in Stony Brook's demanding academic environment, but whose high school academic records do not quite meet regular admissions standards. Students who can demonstrate creative ability in music, art, or theatre; unusual talent or strength in one or more academic area; outstanding athletic achievement; or successful leadership are asked to complete a Supplementary Application form provided by the Undergraduate Admissions Office. High school counselor and teacher evaluations and recommendations and student essays may also be required.

Returning Students

The University welcomes applications from students who had attended college without graduating or who had deferred enrollment but now find they can enroll and are motivated to do so. An interview before or shortly after filing an application has proved helpful, and returning students are encouraged to contact the Undergraduate Admissions Office for an appointment.

Recognizing some of the special concerns of the older returning undergraduate, the Returning Student Services Network offers special orientation sessions, workshops, and other services to help students 25 years of age and older cope with the responsibilities of work, family, and school. Many key offices on campus have designated special returning student advisors to offer information and assistance to older students.

Acceptance to the College of Engineering and Applied Sciences Program

Freshmen and transfer applicants to the University may be accepted directly into the electrical engineering, mechanical engineering, or engineering science major; however, they must specify their interest at the time they apply; admission to the University *does not* guarantee acceptance into these three programs. Applicants admitted to the University but not immediately accepted into the engineering science or the mechanical engineering major may apply for acceptance after their first semester. The electrical engineering applicants will be considered after two semesters at Stony Brook. For further details about acceptance into the electrical engineering major, see p. 210.

A limited number of high-achieving freshman applicants, who must specify their interest on their applications, will be accepted into the computer science major on admission to the University. Other students must complete a prescribed set of courses before acceptance into the major (see p. 205 for criteria). Transfer students may apply only after completing at least one semester.

Freshmen and transfer applicants to the University may be accepted directly into the major in applied mathematics and statistics. Those who did not apply for the major and those who were not accepted into the major when they entered the University may apply only after completion of a prescribed set of courses (see p. 202).

Pre-Enrollment Deposit and Refund Policy

Each new student is required to pay an advance tuition deposit of \$50 and an additional \$75 deposit when housing is requested. Fall deposits, which are applied against charges incurred by the student in the first semester, are due either May 1, or 30 days after admission is offered, whichever is later, except for freshmen accepted under the Scholar Incentives Program, whose deposits are due early in February (exact date will be announced in the letter of notification). Housing deposits are refundable until July 1; tuition deposits paid before April 1 are

refundable until May 1. Spring deposits are due 30 days after admission is offered. Requests for refunds should be sent to Student Accounts, State University of New York at Stony Brook, Stony Brook, NY 11794-1901, to be received by the University not later than the expiration of the due date. To ensure timeliness and receipt of the deposit refund request, the University suggests letters be sent by certified mail, return receipt requested.

Part-Time Matriculation

General Information

Students who, for a variety of reasons, are unable to pursue their degrees full time may wish to apply for study toward a baccalaureate degree in the University's Part-Time Matriculation Program. Of special concern to the University are students working full time, Stony Brook students unable to continue as full-time students, and homemakers whose duties prohibit full-time attendance. The program, however, is open to anyone who meets the general criteria for admission and for whom the University has a place. Students with extensive daytime commitments who have completed the equivalent of two years of college work and are ready to enroll in upper-division courses should consider the Undergraduate Evening Program, described below.

Students interested in part-time matriculation who have never matriculated at Stony Brook must follow application procedures described elsewhere in this chapter for transfer students. Former Stony Brook students must contact the Undergraduate Admissions Office for additional information and instructions. Continuing matriculated students who desire to change their status from full-time to part-time, or from part-time to full-time, do so through the Office of Records. (See Full-Time/Part-Time Status Change, p. 38).

Part-time matriculants may enroll for up to 11 credits per semester and are subject to all academic rules and regulations appropriate to that status.

Undergraduate Evening Program

An evening program offering classes after 6 p.m. is available to part-time matriculated students. Individuals with appropriate prerequisites may work toward a baccalaureate degree in psychology, sociology, political science, English, history, philosophy, art history and criticism, social sciences, or liberal arts.

The University will consider applications for this program only from students who have earned a minimum of 57 transferable credits. As with other transfer students, a grade point average of 2.5 (A=4) is usually the lowest base considered for admission.

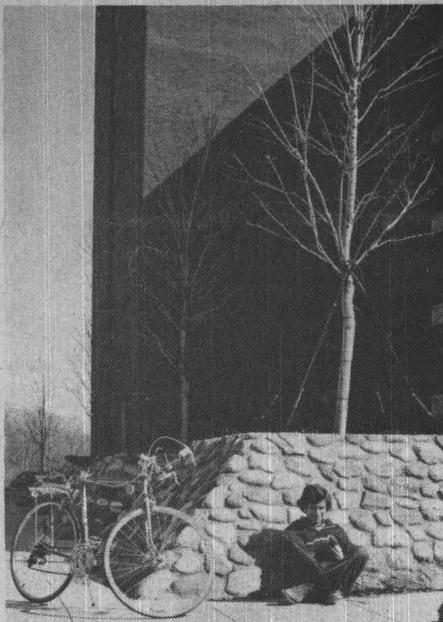
Disabled Students

The academic admission procedures for disabled students are the same as for all other applicants. After admission, it is advisable that students with a disability identify themselves to the Office of the Disabled (246-6051), since early discussion of their special needs will allow time to work out solutions.

Foreign Students

The University admits a limited number of undergraduate students from foreign countries each year. Applicants may contact the Undergraduate Admissions Office directly for appropriate application materials and information, as these differ from forms filed by United States citizens and permanent residents. Completed applications must be returned to the Stony Brook campus rather than mailed to the Processing Center in Albany.

Original certified transcripts, records, certificates, etc. of secondary school and college courses and grades (in English translation and with an explanation of rank in class and the marking system) must accompany the application. Secondary school records must reflect academic achievement equivalent to the minimum for admission on the grading scale conversion to the American system. A 2.5 index is required of foreign students who wish to transfer from other



colleges in the United States. A minimum of one full year of study in a parallel program reflecting an index of 2.5 or higher is required of transfer applicants whose secondary school achievement fell below the standard required for freshman admission.

All persons whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) and achieve a minimum score of 550, or to demonstrate English proficiency by one of the following methods: Michigan Test score of 80 or higher; ALI/GU Test score of 85 or higher; SAT Verbal score of 350 or higher; graduation from an American high school after two years of study; attendance for two years at an American college or university in the United States; proof of attendance at an Intensive English Language Institute at an advanced level in the United States.

It is also necessary to complete a University Financial Affidavit, which indicates that the applicant has sufficient funding to pay for all educational and personal expenses while in the United States. The amount required for documentation may vary from year to year. Contact the Undergraduate Admissions Office for full details.

Since qualified students are admitted to the limited spaces on a first-come, first-served basis, early application completion is critical. Applicants should keep in mind the following deadlines for completed applications: for those currently living outside the United States, fall semester deadline is June 15, spring semester is November 15; for

those currently attending schools within the United States, fall semester deadline is May 10, and spring semester deadline is November 1. *These deadlines are relevant only if spaces remain until deadline dates. All spaces may be filled prior to deadlines.*

It is assumed that all foreign students require on-campus housing unless documented evidence of alternate living arrangements is filed with the application.

Advanced Standing by Examination

Stony Brook will accept up to 30 credits by examination in partial fulfillment of the bachelor's degree. Included in this total may be credit based on standardized external examinations such as AP, CLEP, CPE, and on Stony Brook's own Challenge Program. (See below for details on these programs.) Not more than four credits in each area of distribution requirements may be satisfied by examination. Credit by examination does not count as part of the semester credit required for good academic standing, nor may it be used to fulfill the Stony Brook residency requirement. (See p. 51 for College of Arts and Sciences or p. 199 for College of Engineering and Applied Sciences.)

Credit requested for forms of examinations or programs (e.g., military) not specifically mentioned below must be substantiated by the appropriate documentation. Requests for reviews of students' qualifications must be submitted in writing to the Undergraduate Admissions Office.

Advanced Placement Credit

Advanced placement credit may be extended to freshman students who have completed advanced placement courses in secondary school and who have taken the appropriate CEEB advanced placement examination. Students must request that their test scores be forwarded to Stony Brook. While each academic department determines the minimum test score required for academic credit in a particular subject, three general elective

credits are guaranteed with a score of 3. These credits may be applied toward the appropriate distribution requirement (arts and humanities, natural sciences and mathematics, or social and behavioral sciences) subject to the limitation on using credits-by-examination to satisfy each distribution area.

College Level Examination Programs

The University will award credit for the CLEP (College Level Examination Program) subject examinations and the CPEs (College Proficiency Examinations). The scores received must be equivalent to a grade of C. Credit will not be given for the CLEP General Examinations.

Challenge Program for Advanced Credit

The University's Challenge Program permits undergraduates to earn advanced placement and academic credit by taking examinations in place of regular courses. (For further information about the Challenge Program see p. 44.)

Non-Degree Study

General Information

Non-matriculated study is available at Stony Brook for individuals who are not ready to study for a degree, who are not interested in studying for a degree, or who do not meet general academic criteria for matriculated admission. Non-matriculated students cannot be graduated from the University in this status; however, courses and grades earned may be applied toward a degree program at Stony Brook and used to fulfill the University's residence requirement should a student subsequently matriculate. As with matriculated students, a permanent record is kept by the University's Office of Records.

Non-matriculated students pay the same tuition and other fees as matriculated students. (High school students admitted through the Young Scholars Program described below, however, pay only tuition.) In addition, non-matriculated students are not



eligible to receive most kinds of financial aid. Students from other institutions who plan to study at Stony Brook under the Visiting Student Program described below should see a financial aid counselor on their home campus about continuing to receive financial aid.

Non-matriculated students may study either part time or full time, depending on the program through which they enroll. The three available programs are described below.

Non-matriculated students who wish to apply for matriculation may obtain the appropriate forms in the Undergraduate Admissions Office.

High School Students: Young Scholars Program

The Young Scholars Program offers academically talented high school students who live within commuting distance of Stony Brook the opportunity to complement their high school study with part-time coursework at Stony Brook. The courses are scheduled in the late afternoon, early evening, or on Saturday. In past semesters, course offerings have included: Introduction to Economic Analysis; People, Technology, and Society; Introduction to Sociology and Logical and Critical Reasoning, to name only a few.

For each course the title, credits, and grade will be recorded on an official Stony Brook transcript. The student may later use these courses toward a

degree at Stony Brook or as transfer credit at another college or university.

Applicants should have junior or senior standing with a strong "B" average or higher and approval from their guidance counselor or principal before acceptance into the program.

To request an application and description of course offerings, interested parties should write or phone:

Office of Undergraduate Studies
E-3320 Library Building
State University of New York
at Stony Brook
Stony Brook, NY 11794-3351
(516) 246-3420

Other Part-Time Non-Matriculated Students

Part-time non-matriculated (PTNM) study benefits baccalaureate degree holders who wish to take additional undergraduate courses for career development or to prepare for application to law, medical, or other professional schools, or for self-enrichment; students attending a nearby college who wish to take a course or two a semester at Stony Brook; and students who are seeking to make a change in their lives or to resume educational studies abandoned years earlier.

In most instances, completion of a PTNM application, available only in the Undergraduate Admissions Office, is all that is necessary for admission to this status. There are, however, three important exceptions:

1. Students who have been placed on probation or suspension during the semester immediately preceding application to PTNM status at Stony Brook generally are not eligible for admission. Students who believe their probation or suspension at their previous institution resulted from extenuating or unusual circumstances are advised to consult an admissions counselor.
2. Students who were graduated from high school within the year preceding application generally are not eligible for PTNM study.
3. Students currently attending high school must apply through the Young Scholars Program (see Part-Time Non-Matriculated Study for High School Students, above).

Students accepted into this program are admitted for one semester at a time only and may take up to 11 credits of work. Currently PTNM students may not advance-register for more than 11 credits without authorization from the Undergraduate Admissions Office.

PTNM students choose from among regularly scheduled classes and register as space permits. PTNM students are not eligible for financial aid or housing.

PTNM students' academic performance will be reviewed at the conclusion of each semester by the Undergraduate Admissions Office. Students earning less than a 2.00 (C) grade point average will not be permitted to continue. Those earning less than a 2.00 (C) grade point average who believe there were extenuating circumstances contributing to their poor performance should consult an admissions counselor.

Generally, students who did not initially qualify for matriculation and who wish to do so must successfully complete either 18 credits at Stony Brook as part-time non-matriculated students with a cumulative grade point average of at least 2.5, or 15 credits with a cumulative grade point average of 3.0 (B) or higher.

Visiting Student (Full-Time Non-Matriculated) Status

The Full-Time Non-Matriculated (non-degree) Visiting Student Program allows students to explore possibilities of academic life in a new setting. The greatest number of FTNM students are visiting students from other institutions studying at Stony Brook on a full-time basis through a cooperative statewide program. Other students who may benefit from this status include those whose family, financial, business, or other responsibilities interrupted their educations. (For further information about the Visiting Student Program, see p. 44.)

Full-time non-matriculated students follow the same guidelines as PTNM students (see above) regarding continuation. FTNM students must earn a 2.5 grade point average in that status in order to be admitted as transfer students to a degree program.

Visiting the Campus

Weekend Information Sessions, which provide a brief summary of Stony Brook's academic offerings and detailed information about admissions, financial aid, and campus housing, are held on Saturdays and Sundays from early November to mid-December and from early February to early March. Knowledgeable student tour guides conduct tours of the campus. On selected days, faculty members present more comprehensive descriptions of undergraduate academic programs in their areas. At "A Day in Our World," the final program in this series, admitted students and their families are invited to the campus to meet faculty and staff members.

For those who are unable to attend a Weekend Information Session but wish to visit the University and meet with Stony Brook students, tours of the campus leave from the Undergraduate Admissions Office each weekday at 2:30 and 3:30 p.m. and every Saturday and Sunday between 11 a.m. and 2 p.m. during the academic year (except Thanksgiving, winter, and spring recesses). The student tour leaders have proven very effective in presenting Stony Brook to visitors and in responding to questions.

Although an interview is not required unless requested by the Undergraduate Admissions Office, candidates may request interviews for purposes of information or clarification. Since Stony Brook looks for indications that applicants will benefit from its programs, information from interviews that reveals ability may be used in the decision-making process. Discussions with admissions counselors tend to be more useful after the Undergraduate Admissions Office has received the completed application.

Orientation/Academic Advising Program

Each semester, prior to the start of classes, new students are expected to attend a one-, two-, or three-day orientation session during which they have the opportunity to meet faculty members who advise them about academic programs and potential careers, learn about campus life from student leaders, and register for classes. Experience has shown that students who participate in Orientation adjust more readily to life and study at Stony Brook.

Separate freshman and transfer student orientation programs are conducted during late April (for transfer students only), June, July, and August for fall entrants, and in January for spring entrants. The English Placement Examination, which is mandatory, and the Mathematics Placement Test are offered, and results, available during the Summer Orientation Program, are used for careful preparation of individual academic programs.

Detailed information concerning the content, costs, and dates of Orientation is usually sent at the time of, or subsequent to, the offer of admission. Students unable to attend the Summer Orientation Program are urged to attend the one-day alternative program offered prior to commencement of classes each semester. At the one-day session students register for the courses they will take that semester. All new freshman and transfer students who did not take the English Placement Examination during Summer Orientation must take it during the first two weeks of classes. (The exact time, date, and place will be announced in advance.)

Withdrawal, Readmission, and Leave of Absence

Information concerning withdrawal, readmission, and leave of absence from the University is presented on p. 49.



Financial Information

Registration is not complete until all tuition, fees, and charges, which are due and payable prior to the first day of classes, have been paid or properly deferred. Failure to satisfy this financial obligation will prevent students from receiving academic credit, transcripts, diplomas, and certifications, as well as from being permitted to register for future semesters. Nonpayment does not constitute official withdrawal, which must be done through the Office of Records/Registrar. Failure to attend classes will not relieve students of their financial obligation, or entitle students to a refund. The date of official withdrawal determines eligibility for any refunds in accordance with the schedule found on p. 26 under Refund of Tuition. *All fees and charges are subject to change without prior notice.*

Charge or Fee

Tuition

Undergraduates (12 or more credits)

	<i>First Semester</i>
N.Y. State resident	\$675.00
Non-resident	1600.00
	<i>Second Semester</i>
N.Y. State resident	\$675.00
Non-resident	1600.00
	<i>Year</i>
N.Y. State resident	\$1350.00
Non-resident	3200.00

Graduates (12 or more credits)

	<i>First Semester</i>
N.Y. State resident	\$1075.00
Non-resident	1867.50
	<i>Second Semester</i>
N.Y. State resident	\$1075.00
Non-resident	1867.50
	<i>Year</i>
N.Y. State resident	\$2150.00
Non-resident	3735.00

Professionals (Medicine and Dental Medicine)

	<i>First Semester</i>
N.Y. State resident	\$2775.00
Non-resident	4425.00
Fifth Pathway	4500.00
	<i>Second Semester</i>
N.Y. State resident	\$2775.00
Non-resident	4425.00
Fifth Pathway	4500.00
	<i>Year</i>
N.Y. State resident	\$5550.00
Non-resident	8850.00
Fifth Pathway	9000.00

Part-time Undergraduates (Less than 12 credits)

	<i>(Charge per semester credit hour)</i>
	<i>First Semester</i>
N.Y. State resident	\$45.00
Non-resident	107.00
	<i>Second Semester</i>
N.Y. State resident	\$45.00
Non-resident	107.00

Part-time Graduates
(Less than 12 credits)

(Charge per semester credit hour)

	First Semester
N.Y. State resident	\$90.00
Non-resident	156.00
	Second Semester
N.Y. State resident	\$90.00
Non-resident	156.00

College Fee

	First Semester
Full-time student (12 credits or more)	\$12.50
Part-time student (Per credit hour up to 11 credits)	.85
	Second Semester
Full-time student (12 credits or more)	\$12.50
Part-time student (Per credit hour up to 11 credits)	.85
	Year
Full-time student (12 credits or more)	\$25.00

Housing

	First Semester
Double Occupancy	\$775.00
Meal Plan	To be announced
Cooking Fee (On-campus resident not on Meal Plan)	
Hall	140.00
Suite	90.00
	Second Semester
Double Occupancy	\$775.00
Meal Plan	To be announced
Cooking Fee (On-campus resident not on Meal Plan)	
Hall	140.00
Suite	90.00
	Year
Double Occupancy	\$1550.00
Meal Plan	To be announced
Cooking Fee (On-campus resident not on Meal Plan)	
Hall	280.00
Suite	180.00

Student Activity Fee¹

	First Semester
Undergraduate, full time	\$54.75
	Second Semester
Undergraduate, full time	\$45.25
	Year
Undergraduate, full time	\$100.00
Lost Identification Card	\$3.00

Student Health Insurance

To be announced

Orientation (Optional)²

Freshmen	3 days	\$70.00
	2 days	51.00
Transfer Students	1 day	15.00

Returned Check Fee \$5.00**Late Registration Fee** \$20.00**Late Payment Fee** \$20.00**Advance Tuition Deposit³**

(Freshmen and transfers only) \$50.00

Advance Housing Deposit \$75.00**Transcript Fee** \$3.00 each¹This fee set by Polity (Undergraduate Student Government).²Includes orientation fees and charges for room and board.³Applies toward first-semester charges.**Summer Session****Tuition**

Undergraduate Students	
N.Y. State residents	\$45.00/cr. hr.
Non-resident	107.00/cr. hr.

Graduate and CED Students

N.Y. State resident	\$90.00/cr. hr.
Non-resident	156.00/cr. hr.

Physical Education Courses: Charged at the appropriate rate for one cr. hr.**Fees**

Room, double occupancy	\$50.00/week
Cooking Fee	5.00/week
College Fee	85/cr. hr.
Student Activity Fee	Determined by status
Late Registration Fee	20.00

Payment of Fees and Charges

All fees and charges for a given academic session must be paid in full or properly deferred prior to the first day of classes. All checks must be payable to "SUNY at Stony Brook." Postdated checks are not accepted.

Students making payment on or after the first day of classes or during the late registration period, or preregistered students making payment after the prebilling due date, shall be required to pay a late registration/payment fee of \$20.00. This fee may not be waived and is nondeferable. The late registration period ends at the close of the second week of classes.

Deferment

Students receiving awards provided by the State of New York, managed by the University, or payable to the University, may utilize deferment equal to the amount of the award. Documented proof of the award and the amount must be presented at time of payment to apply the deferment to the account (only current awards are deferrable). Students should refer to pp. 28 to 36 for suggested filing dates to ensure

receipt of appropriate documentation in time to submit for deferment of payment.

Deferment may be granted to students for the following types of awards:

1. *Regents College Scholarships and Tuition Assistance Program*: All New York State residents are encouraged to file for Tuition Assistance Program (TAP) Awards. Incoming students and students who have not received their application form by June 11 should immediately obtain the application form from the Financial Aid Office. (Students should apply for all TAP Awards at the earliest possible date, preferably no later than June 10, if they expect to receive award certification from TAP prior to the beginning of classes in the fall. Students are reminded that failure to file an application in a timely manner can preclude their receiving award credit or deferment.)
2. *National Direct Student Loan (NDSL), Supplemental Educational Opportunity Grant (SEOG)*: Students who have filed applications prior to the specified deadlines and who qualify for these awards will receive award letters from the Financial Aid Office prior to registration. Acceptance of these awards must be returned to the Financial Aid Office promptly.
3. *PELL Grant*: Students will receive an award notice (Student Aid Report) from the federal government. This notice must be submitted to the Financial Aid Office for approval and processing.
4. *Veterans Educational Benefits*: The Office of Veterans Affairs offers deferments to eligible students based on their anticipated receipt of V.A. educational assistance. The deferments allow students to postpone payment of all or part of their tuition charges and fees until the end of the semester for which the charges are incurred.
Students wishing to obtain a deferment should obtain a bill from the Office of Student Accounts, covering all current charges, before coming by the Office of Veterans Affairs to request a deferment.

5. *Office of Vocational Rehabilitation*: Deferment based on Office of Vocational Rehabilitation benefits may be obtained by presentation of an award letter or a voucher indicating the amount of the award and period covered from the Office of Vocational Rehabilitation. All such letters and vouchers must be accompanied by a Tuition Assistance Program Award Certificate, if applicable.
6. *Private, Public, or Industrial Scholarships, Grants, Internships, and Loans* (including Foreign Student Government Scholarships and Vocational Rehabilitation Grants): All students who can present notification of awards payable to the University or jointly payable to the University and the student in the above categories, are eligible for a deferment equal to the amount of the award. In cases where the award is payable to the University and the student, the student will be required to submit a copy of the award letter to the Office of Student Accounts in order to receive deferment.
7. *New York Higher Education Services Corporation Loan (NYHESC)*: After filing the required loan forms, the student will receive the Notice of Loan Guarantee (HE 1300) from Albany. Deferment will be automatically applied to each student's account.
8. *Hardship Deferments*: Students experiencing severe financial hardship based on extraordinary personal circumstances may request deferment on financial charges for only tuition, room, and board. Such requests should be made in the Student Accounts Office (second floor, Administration Building) before registration. Full documentation will be required. Failure to submit an application for awards or financial assistance for which a student is eligible will not be accepted as a basis for a hardship deferment.

Refund Policy

All requests for refunds must be submitted in writing to the Office of Student Accounts, State University of New York at Stony Brook, Stony Brook NY 11794-1301.

Refund of Preenrollment Tuition Deposits

Each new student is required to pay an advance tuition deposit of \$50. Deposits for the fall semester are due by the date indicated on the deposit card's preprinted label. Deposits are applied against charges incurred by the student in the first semester. Requests for refunds will be granted under the following conditions:

1. A request for a refund of the tuition deposit must be made in writing to the Office of Student Accounts, and received by the date printed on the deposit card.
2. If enrolled in another SUNY school, a student must provide satisfactory proof of such enrollment to the Office of Student Accounts.

Refund of Housing Deposits

Each student is required to pay a \$75 advance room deposit when requesting a future room assignment; this deposit will be applied to the housing charges of the first semester. A request for refund of the room deposit must be made in writing to the Office of Residence Life by June 30 (for fall semester), or within 30 days of the date of deposit. Students not receiving an assignment within 30 days of deposit will have until notification of assignment to request a refund.

Refund of Tuition

Students who withdraw from the University and part-time students who decrease their academic load shall be liable for *payment* of tuition in accordance with the following schedule:

<i>Liability during</i>	<i>Semester</i>
First week	0
Second week	0
Third week	50%
Fourth week	70%
Fifth week	100%
<i>Liability during</i>	<i>Summer Session</i>
First week	0
Second week	70%
Third week	100%

The first day of class session as published by the University shall be considered the first day of the semester, quarter, or other term; and Saturday of the week in which this first class session occurs shall be deemed the end of the first week for refund purposes. (Due to the fact that campus offices are not open for business on Saturday, cancellations and withdrawals must be made during the Monday through Friday office working hours.)

A student who does not attend any class sessions after Saturday of the first week and who notifies the University of any intent to cancel registration on or before the second Saturday following the first day of classes shall be deemed to have cancelled registration during the first week.

Certification of the effective date of withdrawal must be made by the Office of Records/Registrar. A withdrawal card available at the Registrar's Office must be completed and returned to that office on the date of withdrawal. To expedite a refund the Student Accounts copy of the withdrawal card should be submitted with the refund request.

No money shall be refunded for tuition unless application for refund is made within one year after the end of the term for which the tuition requested to be refunded was paid to the State University.

Exception

There shall be no tuition or fee liability established for a student who withdraws to enter military service prior to the end of an academic term for those courses in which he or she does not receive academic credit. Acceptable proof must be submitted.

Refund of Room Fee

Once a student has registered and occupied a room, no refund will be granted for room payments for that quarter. No prorated refunds are granted.

Refund of Meal Plan Fee

Students wishing to cancel their meal plan contract must do so through the Faculty Student Association, located in the Stony Brook Union. On notification from FSA, the Office of Student Accounts will automatically credit the account and prepare any refund due, if appropriate.

Refund of Student Activity Fee

As determined by Polity, GSO, and the CED student governments, full refunds will be granted if the student withdraws within the first two weeks of classes. No refunds will be granted for withdrawals after the second week of classes.

Refund of Cooking Fee

Cooking fee may be refundable if the student has enrolled in the Meal Plan. The amount of such refund is to be determined by University policy in effect at the time.

Refund of College Fee, Late Registration Fee, and Lost ID Card Fee

These fees are not refundable.

Refunds Caused by Overpayment or Processing Errors

Refunds of amounts paid will be made when a student overpays University fees or when the student pays fees which are erroneous.

Other Expenses

Food

The University, through a food service contractor, provides several meal plan options. Meals are served at three dining halls located in the residential areas. The options currently include a Five-Meal, a Ten-Meal, a Fifteen-Meal, and a Nineteen-Meal Plan, offered for 15 weeks. For 1984-85 cost ranged from \$507 for the minimal plan to \$694 for the maximal plan and from \$489 to \$665 for the fall and spring semesters, respectively. Similar plans will be offered in coming years but prices cannot now be predicted. It is expected, however, that future price ranges will not vary greatly from those now in effect, barring unforeseeable inflationary effects.

The residence dining halls also offer meals on a cash basis at prices, depending on the meal and the selection, currently ranging from about \$2.50 to \$6 per meal. Dining halls are open daily but hours of operation vary from year to year. The student is urged to consult dining hall staff for hours applicable during his or her residency.

In addition to the dining halls, the food service contractor operates a



restaurant and several cafeterias. The End of the Bridge restaurant in the Stony Brook Union is open for lunch 11:30 a.m. to 2:30 p.m., Monday to Friday; prices range from \$2.50 to \$5.50 per meal. The Union Cafeteria is open Monday to Friday, from 8 a.m. to 7:15 p.m. Prices range from \$1.50 to \$3.50 per meal.

There are other eating establishments on campus, some student-operated, that offer everything from snacks to complete meals. Prices are generally comparable to those given above. Hours of operation vary from place to place and it is best to inquire at orientation or after arriving on campus.

Resident students who do not sign up for a meal plan are required to pay a cooking fee of \$140 per semester if they reside in a hall, and \$90.00 per semester, if they reside in a suite. Students who elect to do this may expect to spend between \$35 and \$50 a week for food.

New undergraduates residing on campus are required to participate in a mandatory meal plan for two semesters (one year). This policy applies to transfer students as well as freshmen.

The area immediately around the campus has several eating places, of differing quality and degree of accessibility. Most are reasonably priced.

Books and Supplies

The average estimated expense is \$500 for nine months (September-May). This figure is included in the basic student aid budget.

Miscellaneous Expenses

The average estimated personal expense is \$800 for nine months. This figure is used for the basic student aid budget.

Travel Expenses

The average estimated expense is \$400 for nine months on campus for a student residing in a dorm. The average estimated expense is \$800 for nine months for a student residing with parents and commuting to the campus. These amounts are also used for the basic student aid budget.

Off-Campus Housing

The Off-Campus Housing Office provides information concerning rentals of rooms, apartments, and houses within a 15-mile radius of the University. All landlords listing property with the University must sign a statement assuring non-discriminatory practices; listings do not become available until such assurance is received. The Off-Campus Housing Office and the University may not become parties to landlord-tenant disputes.

The common price per month for a furnished room is \$200. Kitchen privileges are most often included in this price. Rooms available in houses rented by other students are also listed as houses to share. That is, arrangements can sometimes be made to share a complete house for \$150-200 per month plus a percentage of the utilities cost.

Apartment listings cover those available in standard apartment building complexes and those available in private homes. The usual rental rate of a studio apartment (one large room, bathroom, closets, kitchenette) in a house is approximately \$300-350 per month. A studio apartment in one of the apartment facilities is usually \$325-400. Apartments in housing complexes usually provide more space and privacy. A conventional one-bedroom apartment, including living room, dining room, kitchenette, bathroom, and closet space, usually ranges in price from \$400-450 per month. Utility costs, except electricity, are often included in the price.

There are also listings for house rentals in the area. These rentals range

from \$500-900 per month, not including utilities. The price depends on the number of rooms in the house and the distance from the campus.

Financial Aid

The Office of Financial Aid and Student Employment administers several federal and state programs that provide funds to assist eligible students in pursuing their academic goals. These programs are the National Direct Student Loan (NDSL), Supplemental Educational Opportunity Grant (SEOG), College Work Study Program (CWSP), Educational Opportunity Program (EOP), and some private scholarships. The office also manages the PELL Grant, Guaranteed Student Loan program (GSL), and New York Higher Education Services Corporation programs (TAP, Regents Scholarship). These programs are described below together with other state and federal assistance for which prospective students might qualify while attending Stony Brook.

The basic applications for programs administered by the Office of Financial Aid and Student Employment are the Financial Aid Form (FAF) and the Stony Brook Institutional Application. Application forms and information about application guidelines and deadlines are available at the Office of Financial Aid and Student Employment (Room 230 of the Administration Building, telephone: 516/246-7010).

For information on scholarships, see Awards and Honors, p. 46.

"Emancipated" or "Independent" Student Status

The University adheres to current federal guidelines for validating the status of a student as independent or emancipated for financial aid purposes. These guidelines currently require that:

1. The student has not resided with parents for more than a total of six weeks (42 days) in the prior year and six weeks in the current year, and will not exceed such residence with parents during the coming year.
2. The student has not been claimed as a dependent on any income tax return filed by the parents for the

current year, and will not be so claimed for the next year.

3. The student has not received more than \$750.00 worth of support from parents in the current year and does not anticipate such receipt in the next year.

Students are cautioned that these guidelines are subject to change and that the University will adopt any new standards as soon as they are promulgated.

STATE PROGRAMS

Note: Where any question of eligibility exists, the student or prospective student should consult the Office of Financial Aid and Student Employment.

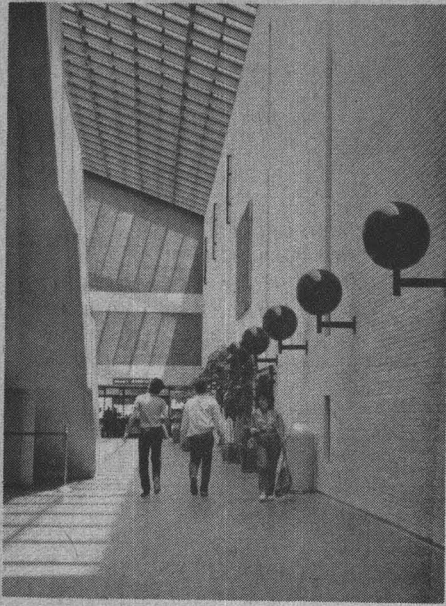
Tuition Assistance Program (TAP)

Application Procedures

Applicants must apply annually to the New York State Higher Education Services Corporation (HESC), 99 Washington Avenue, Albany, NY 12255. The application deadline for the 1984-85 academic year was March 31, 1985. TAP application forms are mailed, beginning in April, to all: (1) students who currently receive a TAP grant or Regents Scholarship award; (2) high school seniors who apply for a Regents Scholarship; (3) approved postsecondary institutions and high schools in New York State; and (4) central admissions applicants of the State University of New York. Any student or prospective student can obtain a TAP application from any high school guidance office, or financial aid office.

Before submitting the application, the applicant should review it with the high school counselor or college financial aid officer, especially if there have been questions relating to completion of the application.

The Higher Education Services Corporation determines the applicant's eligibility and mails an award certificate directly to the applicant indicating the amount of the grant. The applicant presents the Institutional Copy of the certificate at the time of payment of tuition. (See "Deferment, p. 25.)



Selection of Recipients and Allocation of Awards

Tuition Assistance Program is an entitlement program. There is neither a qualifying examination nor a limited number of awards. The applicant must: (1) be a New York State resident and a U.S. citizen, or a permanent resident alien, parolled refugee, or conditional admittant to the United States; (2) be enrolled full time and matriculated at an approved New York State postsecondary institution and program; (3) have, if dependent, a family net taxable income below \$29,000, or if independent and single with no tax dependents, a net taxable income below \$5,667; and (4) be charged a tuition of at least \$200 per year. All income data are subject to verification by the New York State Department of Taxation and Finance.

The current definition of independent status is as follows.

1. 35 years of age or older on June 30, or
2. 22 years of age but under 35 on June 30, and not:
 - a. a resident in any house, apartment, or building owned or leased by parents for more than six consecutive weeks;
 - b. claimed as a dependent by parents on their federal or state income tax returns;
 - c. recipient of gifts, loans, or other financial assistance in excess of \$750 from parents; or

3. under 22 years of age on June 30, and meeting all other requirements of 2. above, and in addition able to meet at least *one* of the following requirements:
 - a. both parents deceased, disabled, or incompetent, or
 - b. receiving public assistance other than Aid to Families with Dependent Children (AFDC) or food stamps, or
 - c. ward of a court, or
 - d. unable to ascertain parents' whereabouts, or
 - e. unable, due to an adverse family situation, to submit information on parents' income, or
 - f. married on or before December 31 of the year preceding the academic year for which application is made, or
 - g. enrolled as a graduate student, or
 - h. received a TAP award as a financially independent student in the academic year preceding that for which application is made.

Note: Independent status under the State definition does not necessarily ensure independent status for federal aid programs. See "'Emancipated' or 'Independent' Student Status," above.

Undergraduate students may generally receive TAP awards for four years of study. Students enrolled in approved five-year programs, or in a State-sponsored opportunity program, may receive undergraduate awards for five years. Graduate students may receive awards for four years. No student (including opportunity students) may receive awards for more than a total of eight years of undergraduate and graduate study.

Award Schedule

The amount of the TAP award is scaled according to level of study, tuition charge, and net taxable income. (See note below.) Awards at Stony Brook range from a minimum of \$300 to a maximum of \$1375. Detailed information regarding the determination of actual award amounts is available in the TAP Student Payment Application, a copy of which can be obtained from high

school guidance offices or from a financial aid office.

Note: The income measure is the family's (or independent student's) New York State *net taxable income* from the preceding tax year plus certain non-taxable income, and (for dependent students) support from divorced or separated parents. This income is further adjusted to reflect other family members enrolled full time in postsecondary study.

Regents College Scholarships

Application Procedures

Information and application forms are available in the fall from any New York State high school. Prospective applicants in their final year of high school should file their applications with the high school principal by November 1.

Selection of Recipients and Allocation of Awards

Scholarships are awarded competitively for full-time postsecondary study in New York State in: (1) approved degree, certificate, or diploma programs offered by colleges or other degree-granting institutions; (2) hospital school programs leading to licensure or certification; and (3) two-year programs in registered business schools not authorized to grant degrees.

The competitive basis of the award is the score on the Scholastic Aptitude Test (SAT) of the College Board or the American College Testing (ACT) Program Assessment. The examinations may be taken as many times as desired by the applicant prior to November 1 of the final year of high school study.

The applicant must: (1) have been a legal resident of New York State for at least one year immediately preceding the first term for which the application for an award is made; (2) either graduate from high school by the end of the school year in which the examination was taken or be accepted as a full-time matriculated student at a college or other approved school located in New York State by September of that year; and (3) not previously have competed for a

**Standard of Satisfactory Academic Progress
Only for the Purpose of Determination
of Eligibility for State Student Aid**

Semester Calendar
Baccalaureate Degree Program

Before Being Certified for This Award	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth**	Tenth**
A Student Must Have Accrued at Least This Many Credits	0	3	9	18	30	45	60	75	90	105
With at Least This Grade Point Average	.5	.75	1.20	1.40	1.50	1.60	1.70	1.80	1.90	

**Only students enrolled in the A.I.M./E.O.P. Program are eligible for ten semesters of undergraduate awards.

Regents Scholarship. Requirements 2 and 3 may be waived for reasons satisfactory to the Commissioner of Education.

Award Schedule

The award is \$250 per year, for up to five years, depending on the normal length of the program in which the recipient is enrolled. To receive payment, the scholarship holder must annually file a Student Payment Application with the New York State Higher Education Services Corporation.

TAP and Regents Scholarship Award Regulations (Undergraduate Students)

On October 30, 1981 the New York State Education Department issued new regulations governing eligibility for Tuition Assistance Program and Regents Scholarship Awards. Under these regulations students must meet minimum academic achievement requirements in order to receive payment of awards.

The minimum achievement standards are based on cumulative grade point average and the number of credits earned each semester. The chart that

follows provides a detailed analysis of the State Education Department's requirements.

It should be noted that the minimum achievement standards for payment of awards are less demanding than, and are not the same as, those established by the University for good academic standing. Copies of the University's academic standing regulations are available at the Office of Records/Registrar.

A student who fails to meet these minimum standards for any one semester will be ineligible to receive an award payment for the following semester. Please note that each applicant will be allowed one waiver of the minimum achievement requirements during his/her career as an undergraduate student. Students who fail to meet these requirements will receive notification in the mail as to their next appropriate course of action.

Regents Awards for Children of Deceased or Disabled Veterans

Application Procedures

A special application, obtainable from the high school principal or counselor, must be filed with the New York State Higher Education Services Corporation (HESC), Albany, NY 12255. Documentary evidence to establish eligibility is required with the application. Any high school counselor can provide assistance with this.

Selection of Recipients and Allocation of Awards

The applicant must be: (1) the child of a veteran who died, or who has a current disability of 50 percent or more, or who had such disability at the time of death, resulting from U.S. military service during one of the following periods:

April 16, 1917-November 11, 1918
December 7, 1941-December 31, 1946
June 25, 1950-July 27, 1953

October 1, 1961-March 29, 1973
and; (2) a legal resident of New York State. Legal residence in New York State on the part of the parent is also required: at the time of entry into military service, or, if the parent died as the result of military service, at the time of death.

Regents awards to children of deceased or disabled veterans are independent of family income or tuition charge, and are in addition to such other grants or awards to which the applicant may be entitled.

Award Schedule

The amount of the award is \$450 per year, for up to five years, depending on the normal length of the program of study, of full-time study in a college or in a hospital nursing school in New York State.

State Aid to Native Americans

Application Procedures

Application forms may be obtained from the Native American Education Unit, New York State Education Department, Albany, NY 12230. The completed application form should be forwarded by the applicant to the Native American Education Unit along with the following materials: (1) official transcript of high school record or photostat of General Equivalency Diploma; (2) letter(s) of recommendation from one or more leaders in the community attesting to personality and character; (3) personal letter, clearly setting forth detailed educational plans and desires; (4) signatures of the parents of minor applicants, approving education plans; (5) official tribal certification form; and (6) copy of acceptance letter from college attending.

Selection of Recipients and Allocation of Awards

The applicant must be: (1) a member of one of the Native American tribes within New York State and a resident of New York State; (2) have graduated from an approved high school, or have earned a General Equivalency Diploma, or be

enrolled in a program in an approved postsecondary institution leading to degree-credit status and the General Equivalency Diploma; and (3) enrolled in an approved postsecondary institution in New York State.

State Aid to Native Americans is an entitlement program. There is neither a qualifying examination nor a limited number of awards.

Award Schedule

The award is \$1,100 per year for a maximum of four years of full-time study (five years, where a fifth year is required for completion of degree requirements), with a minimum of 12 credit hours per semester. Students registered for less than this number will be funded at approximately \$46 per credit hour. Remedial programs are not fundable.

Responsibilities of Recipients

Students are responsible for notifying the Native American Education Unit in writing of any change in student status or program or institutional enrollment. Students must also submit semester grades, at the end of each semester, showing satisfactory progress toward completion of degree or certification requirements.

Aid for Part-Time Study (APTS)

Application Procedures

Applicants must complete an APTS application that is available from the Office of Financial Aid and Student Employment. The application deadline for the Fall 1984 semester was September 7, 1984; State regulations require that recipients be identified no later than 21 days into the semester. In addition, APTS candidates must be able to show evidence of having applied for the Pell Grant (application materials are available from the Office of Financial Aid and Student Employment).

Selection of Recipients and Allocation of Awards

APTS is available to assist part-time matriculated students in meeting tuition costs. Consideration can be given to part-time degree candidates who are enrolled for at least 6 credits and not more than 11 credits. Candidates must also have successfully completed at least 6 credits prior to the semester in

which APTS assistance is requested. To be eligible for APTS, students must be in good academic standing and are expected to demonstrate financial need as documented by means of the Pell Grant application. Certain income restrictions also apply (details outlined on the APTS application). APTS award amounts may range from \$100 to \$495 per semester dependent on APTS allocation and students' need.

Guaranteed Student Loan Program

Application Procedures

The student should obtain a loan application from a participating New York State lending institution (bank, credit union, etc.) in his or her area of permanent residence. The completed application is presented to the financial aid officer at the postsecondary institution being attended. The application is then routed to the lending institution and the Higher Education Services Corporation.

A counseling session or an interview, or both, may be required. When the loan is approved, a promissory note is signed by the student. For the school year beginning in the fall, funds may not be disbursed earlier than August 1.

Selection of Recipients and Allocation of Awards

To be eligible for a Guaranteed Student Loan, a student must: (1) provide family financial information to the school on the Guaranteed Student Loan Needs Test; under current (1984-85) regulations and guidelines, if the family adjusted gross income is over \$30,000, the student must demonstrate a *need* for the loan (Need is based on the cost of attendance minus the family's contribution and other aid being received); (2) be a U.S. citizen or permanent resident alien, or other eligible resident; and (3) be enrolled at least half-time, at an approved college, university, or other postsecondary institution in any of the United States or its territories, or an approved foreign country.

received); (2) be a U.S. citizen or permanent resident alien, or other eligible resident; and (3) be enrolled at least half-time, at an approved college, university, or other postsecondary institution in any of the United States or its territories, or an approved foreign country.

Loan Schedule

An undergraduate may borrow up to \$2,500 per class year, up to a total of \$12,500.

A graduate student may borrow up to \$5,000 per class year, up to a combined total of \$25,000 *including* any loans for undergraduate study.

Responsibilities of Recipients

A student may borrow at a relatively low interest rate (currently 8 percent) with no repayment as long as he or she remains enrolled at least half-time, and for six months after he or she ceases to be at least a half-time student. Payment of principal may be deferred for up to three years for certain categories of borrowers including Public Health Service officers, the temporarily disabled, those on internships required before entering a profession, and full-time Peace Corps or Vista or similar national program volunteers.

If a student applies for an additional loan, application must be made to the original lending institution.

Four months after ceasing to be at least a half-time student, the borrower must make formal arrangements with the lending institution to begin repayment. The following regulations apply:

1. Depending on the amount of the loan, the minimum monthly payment will be \$30 plus interest. Under unusual and extenuating circumstances the lender may, on request, permit reduced payments.
2. The maximum repayment period is 10 years.
3. The maximum period of a loan from date of the original note may not exceed 15 years, excluding authorized deferments of payments.
4. Repayment in whole or part may be made at any time without penalty.

Auxiliary Loans to Assist Students (ALAS)

These loans are available, through the Guaranteed Student Loan Application, to graduate students and to undergraduate students who are financially independent of their parents. The interest is 12% annually with interest payments being made while in school. Undergraduates can borrow up to \$2,500/yr. including what was borrowed through GSL for an aggregate total of \$12,500. Graduate students may borrow up to \$3,000/yr. *in addition to* what was borrowed through GSL.

Repayment of the amount borrowed plus interest begins immediately when the student leaves school or drops below full-time status.

Parent Loan for Undergraduate Students (PLUS)

These loans are available for parents of financially dependent, undergraduate students. Parents can apply for \$3,000/yr. per child for an aggregate total of \$15,000 for each child.

The interest rate is 12%, and repayment begins within two months of receipt of the loan.

Educational Opportunity Program (EOP)

Educational Opportunity Program (EOP) stipends are allocated, on the basis of need, to undergraduate students enrolled in the AIM Program.

The Advancement on Individual Merit (AIM) Program—Stony Brook's Educational Opportunity Program (EOP)—provides an opportunity to attend college for capable students who have not had the same opportunity as others to realize their academic potential because of limited financial resources and inadequate academic preparation. To be admitted to the University through the AIM Program, the applicant's high school academic performance must have been below the level normally used to determine admission to the University. In addition, the applicant must meet financial eligibility guidelines established by New York State.

A student who is admitted to the University through the AIM Program is offered financial and personal counseling and is eligible to receive a

range of academic support services. These services include tutoring, special academic advisement, skills improvement activities and special development classes and programs. At the same time, these students participate fully in all campus academic and social activities. Many students who enter complete a baccalaureate degree program, and many continue their education in graduate and professional schools throughout the country.

For further information on AIM, contact:

The AIM/EOP Program
Library W3520
SUNY at Stony Brook
Stony Brook, NY 11794-3375
Telephone: (516) 246-4016

Work Incentive Program (WIN)

Application Procedures

Federal law mandates that recipients of Aid to Families with Dependent Children (AFDC) be screened for participation in WIN. Those not considered exempt are required to participate. Exempt recipients of AFDC may volunteer for WIN if they so choose. These are the only persons who are eligible for WIN. Application is through the New York State Department of Social Services, which determines eligibility for AFDC.

Selection of Recipients and Allocation of Awards

As part of achievement of the primary goal of the WIN program to place eligible applicants in permanent unsubsidized employment, applicants may be registered with the New York State Department of Labor for institutional training. Training must be related to jobs which are, or are likely to become, available in the WIN project area. WIN registrants may be placed in training programs which do not exceed one year, e.g., to be considered for the program, a registrant wishing to complete a bachelor's degree must have completed three years towards this goal and be enrolled in a vocationally oriented curriculum.

Award Schedule

Tuition and books are paid for by WIN. Registrants are paid \$3 per day for training-related expenses, plus an incentive allowance of up to \$30 a month which is not included in AFDC assistance payment computations. Child care costs may also be paid.

Responsibilities of Recipients

Each participant in the institutional training component of the WIN program has the responsibility of attending training, doing the best he or she can to complete training, and to obtain regular unsubsidized employment.

Vocational Rehabilitation**Application Procedures**

Handicapped persons may obtain a list of local Office of Vocational Rehabilitation (OVR) offices from: Office of Vocational Rehabilitation, New York State Education Department, Albany, NY 12230.

Selection of Recipients and Allocation of Awards

Any disabled person, with a substantial employment handicap, who can become employable within a reasonable period of time may be eligible. OVR serves those having any physical, emotional, or mental disability except blindness.

The legally blind are served by the Commission for the Blind and Visually Handicapped, State Department of Social Services, 40 North Pearl Street, Albany, NY 12243.

Eligible applicants may receive counseling, medical examinations and other evaluation services, physical restoration services, and instruction and training including that given at institutions of postsecondary education.

Clients are asked to share the expense, based upon State standards, of some of the services provided, such as college or university expenses to enable the client to attain his or her vocational objective.

Tuition Deduction, and the Parents' and Students' Savings Plan (PASS) Deduction

New York State resident parents (and others who pay the postsecondary education tuition of dependent, full-time students) may take a deduction for part

of this tuition payment for State and city income tax purposes. The amount allowable as a deduction is the lesser of one-half of the tuition paid (less Tuition Assistance Program awards) or \$1,000. The institution of postsecondary education must be located in New York State. Resident parents may also deduct amounts equivalent to payments into a qualified higher education fund. In both cases deductions are from federal adjusted gross income.

For further information parents should contact:

New York State Department of Taxation and Finance
Taxpayer Services Division
Building 9
State Campus
Albany, NY 12227

FEDERAL PROGRAMS**PELL Grant****Application Procedures**

Applications and other materials are available through financial aid offices at approved postsecondary institutions. Students may also apply for PELL by filing a Financial Aid Form (FAF).

The completed application should be submitted for processing according to the directions included on it. A calculated Student Aid Index will be sent to the applicant based on the information in the application. The amount of the applicant's award is determined by the financial aid officer at the postsecondary institution attended and is based on the Student Eligibility Index, enrollment status, and costs. Upon enrollment, funds are paid directly to the applicant or credited to his or her institutional account.

Selection of Recipients and Allocation of Awards

The PELL Grant Program is an entitlement program. Eligibility and award amount are based on need rather than academic achievement. The applicant must be enrolled as an

undergraduate student, at least on a half-time basis, in an approved postsecondary institution and must need financial assistance to continue his or her education.

Financial need is determined by a formula applied to all applicants. It was developed by the U.S. Department of Education and is reviewed annually by Congress. The student aid index is calculated by this formula.

An eligible student may receive grants for the period required to complete a first baccalaureate degree. Awards may be used for tuition, fees, books, and living expenses.

Award Schedule

Currently awards range from \$200 to \$1,900, but may not be more than one-half the total cost of attendance. For academic year 1985-86, the maximum award authorized is to be \$2,100. The amount of the award will be affected by costs of attendance and full- or part-time enrollment status. The PELL award is not duplicative of State awards.

Responsibilities of Recipients

The student must continue to make satisfactory academic progress in the program in which he or she is enrolled. The student must not owe any refunds on PELL or other awards paid, or be in default on repayment of any student loan.

Before receiving payment, the student must sign a statement of educational purpose confirming that all money received will be used for the costs of postsecondary education only.

Supplemental Educational Opportunity Grants (SEOG)**Application Procedures**

Application is through the institutional financial aid office, which is responsible for determining who receives a Supplemental Grant, and the amount.

Selection of Recipients and Allocation of Awards

The applicant must be: (1) in exceptional financial need, to the extent that without a Supplemental Grant award his or her education could not

be continued; (2) at Stony Brook, SEOG recipients must be undergraduate degree candidates enrolled full-time.

Award Schedule

The award ranges from \$200 to \$1,500. A student may be eligible to receive grants for the period required to complete a first baccalaureate degree.

Responsibilities of Recipients

The student must continue to make satisfactory academic progress.

National Direct Student Loan Program (NDSL)

Application Procedures

Application is made through the postsecondary institution financial aid office. Forms, as well as specialized information on loan cancellation provisions for borrowers who go into certain fields of teaching or specified military duty, are available from this source.

Selection of Recipients and Allocation of Awards

At Stony Brook, NDSL Loans are available to students enrolled full-time as graduate or undergraduate degree candidates.

Award Schedule

Maximum amounts that may be borrowed are: \$3000 by students who have completed less than two years of a program leading to a bachelor's degree or who are enrolled in a vocational program; \$6,000 by students who have completed two years towards a bachelor's degree, to include any amount borrowed through an NDSL for the first two years of study; \$12,000 for graduate study, to include any amount borrowed through an NDSL for undergraduate study.

Actual NDSL awards are limited based on annual allocations and collections and presently average \$725 per year at Stony Brook.

Responsibilities of Recipients

Continued eligibility is dependent on maintenance of satisfactory academic progress. The current interest rate, payable during the repayment period, is 5 percent on the unpaid principal. Repayment begins six months after

graduation or leaving school, and may extend over a period of 10 years. Payment may be extended over an additional 10-year period for certain low-income students, and may be deferred for up to three years for certain categories of borrowers including Public Health Service officers, the temporarily disabled, those on internships required before entering a profession, and full-time Peace Corps, or Vista, or similar national program volunteers.

College Work-Study Program (CWS)

Application Procedures

Application is made through the postsecondary institutional financial aid office. Eligibility is determined and work arrangements made at this point.

Selection of Recipients and Allocation of Awards

At Stony Brook, the applicant must be enrolled full time as a graduate or undergraduate degree candidate. The applicant must be enrolled at least half-time in an approved postsecondary institution.

An institution must make employment reasonably available to all eligible students in the institution who are in need of financial aid. In the event that more students are eligible for CWS than there are funds available, preference is given to students who have great financial need and who must earn a part of their educational expenses.

Award Schedule

The Office of Financial Aid and Student Employment arranges jobs on campus. Students may arrange up to 20 hours of work each week. Hourly wage rates are presently \$3.35 per hour for undergraduate students.

Factors considered by the financial aid office in determining whether, and how many hours, the recipient may work under this program are financial need, class schedule, academic progress, and health status.

Responsibilities of Recipients

Satisfactory academic progress must be maintained. Federal regulations specify that academic progress be measured each year (following the Spring semester). Eligibility for assistance from the federal CWSP, GSL, NDSL, SEOG, and PELL Grant Programs is contingent on the candidates' meeting Stony Brook's "quality" and "quantity" criteria (see p. 45). In addition, recipients of federal student financial aid are required to complete their degree requirements within a stated time frame. Specifics on academic progress as a condition of federal student aid eligibility are available from the Office of Financial Aid and Student Employment.

Note: Eligibility for SEOG, NDSL, and CWS is determined on the basis of a uniform methodology and by means of the Financial Aid Form (FAF), and the Stony Brook Institutional Application (SBIA). All awards under these programs are contingent upon the individual institution's allocation and on the availability of funds.

U.S. Bureau of Indian Affairs Aid to Native Americans

HIGHER EDUCATION ASSISTANCE PROGRAM

Application Procedures

Application forms may be obtained from the Bureau of Indian Affairs Office. An application is necessary for each year of study. An official needs analysis from the college financial aid office is also required each year.

Each first-time applicant must obtain tribal enrollment certification from the Bureau agency that records enrollment for the tribe.

Selection of Recipients and Allocation of Awards

To be eligible, the applicant must: (1) be at least one-fourth American Indian, Eskimo, or Aleut; (2) be an enrolled member of a tribe, band, or group recognized by the Bureau of Indian Affairs; (3) be enrolled in or accepted for enrollment in an approved college or

university, pursuing at least a four-year degree; and (4) have financial need.

Responsibilities of Recipients

For grants to be awarded in successive years, the student must make satisfactory progress towards a degree, and show financial need. Depending on the availability of funds, grants may also be made to graduate students and summer session students. Eligible married students may also receive living expenses for dependents.

ADULT VOCATIONAL TRAINING PROGRAM

Application Procedures

Same as Higher Education Assistance Program, above.

Selection of Recipients and Allocation of Awards

The Vocational Training Program is for short-term vocational training (up to two years).

To be eligible, the applicant must: (1) be at least one-fourth American Indian, Eskimo, or Aleut; (2) be an enrolled member of a tribe, band, or group recognized by the Bureau of Indian Affairs; (3) reside on a reservation; (4) be enrolled in or accepted for enrollment in an approved training school; and (5) have financial need.

Responsibilities of Recipients

For grants to be awarded the following year, the student must make satisfactory progress toward program completion, and show financial need.

Veterans Administration (VA) Educational Benefits

Application Procedures

Students interested in applying for benefits under any of the VA educational assistance programs should contact the Office of Veterans Affairs for applications, information, and assistance in applying for such benefits. The office is located in Room 130, Humanities Building, telephone (516) 246-7012.

G.I. BILL EDUCATIONAL ASSISTANCE

Selection of Recipients and Allocation of Awards

Generally, eligibility for benefits under this program requires the veteran to have at least 181 days of continuous active duty service, any part of which occurred after January 31, 1955 and before January 1, 1977. An exception is provided for veterans who contracted with the armed forces prior to January 1, 1977, under a delayed-entry program, were assigned to a reserve component at that time, and who subsequently entered active duty service before January 2, 1978. Discharge must have been under conditions other than dishonorable.

A veteran with less than 181 days of service may be eligible if he/she was released because of a service-connected disability.

Entitlement is earned at the rate of 1½ months of training for each month or fraction of a month of service. If the veteran served for at least 18 continuous months, entitlement is automatically increased to the maximum, which is 45 months. Each veteran has ten years following the date of his/her discharge in which to use these benefits. However, under the provisions of Public Law 94-502, this program will terminate on December 31, 1989, regardless of the veteran's date of discharge.

Active servicepersons who meet all the service requirements applicable to veterans under this program, with the exception of a final release from active duty, may be eligible to receive educational assistance. Typically, this assistance covers only tuition and fees.

Award Schedule

Current monthly benefit rates (as of October, 1984) are shown below:

Status	Dependents			Each Additional
	None	1	2	
Full-time	\$342	\$407	\$464	\$29
Three-quarter	257	305	348	22
Half-time	171	204	232	15
Less than half	tuition and fees			

SURVIVORS' AND DEPENDENTS' EDUCATIONAL ASSISTANCE

Selection of Recipients and Allocation of Awards

The sons, daughters, spouse or surviving spouse of a veteran may be eligible for educational assistance if the veteran died while on active duty, died after release or discharge from active duty of a service-connected disability, became permanently and totally disabled as a result of a service-connected disability, died while a service-connected disability was rated permanent and total, or has been listed as missing in action, captured, detained, or interned in the line of duty by a foreign government or power for more than 90 days.

Eligible persons are entitled to 45 months of educational assistance and are paid benefits on the same basis as a veteran with no dependents (under the G.I. Bill). The delimiting dates, by which the benefits must be used, vary and are subject to modification in some cases.

POST-VIETNAM-ERA VETERANS EDUCATIONAL ASSISTANCE PROGRAM (VEAP)

Selection of Recipients and Allocation of Awards

VEAP is a voluntary contributory matching program available to persons who entered active duty service after December 31, 1976. Benefits are accumulated by including contributions from the participating serviceperson and a matching fund from the VA at the rate of \$2 for each \$1 contributed by the participant. Total contributions by the serviceperson may not exceed \$2700 under current law. The military services may contribute additional amounts to the educational fund as a recruiting or retention incentive. Maximum entitlement under VEAP is limited to 36 months.

Benefit payments are made to servicepersons on the same basis as they are made to veterans. Each veteran has ten years from the date of his/her release from active duty to use the entitlement.

VOCATIONAL REHABILITATION FOR DISABLED VETERANS

Selection of Recipients and Allocation of Awards

A veteran of World War II or thereafter who has a service-connected disability which entitles him/her to VA disability compensation and who is in need of vocational rehabilitation because his/her disability creates an employment handicap may be eligible for benefits under this program.

Vocational rehabilitation may be provided for up to 48 months, and an eligible veteran has generally 12 years from discharge or release from active duty in which to use these benefits. The VA may approve an extension of time and/or length of training in certain cases.

If a veteran is approved for benefits, the VA will pay the cost of tuition, fees, books and supplies. The veteran also receives a monthly subsistence allowance.

Award Schedule (Subsistence Allowance)

Current monthly benefit rates (as of October, 1984) are shown below:

Status	Dependents			Each Additional
	None	1	2	
Full-time	\$282	\$349	\$411	\$30
Three-quarter Half-time	pro-rated according to status			

VIETNAM VETERANS TUITION AWARDS (VVTA)

Application Procedures

Information and applications are available from the Office of Veterans Affairs, Room 130, Humanities Building, or the Financial Aid Office, Room 230, Administration Building.

Selection of Recipients and Allocation of Awards

The Vietnam Veterans Tuition Award Program provides financial assistance to veterans enrolled in undergraduate degree programs on either a full-time or part-time basis. To be eligible under this program, the veteran must:

1. have served in the armed forces of the United States in Indochina between January 1, 1963 and May 7, 1975;
2. have been discharged from the service under other than dishonorable conditions;

3. have been a resident of New York State on April 20, 1984, or have been a resident at the time of entry into the service and resume residency by September 1, 1987;
4. apply for a Tuition Assistance Program (TAP) award and a Pell Grant if applying as a full-time student or for the Pell Grant only if applying as a part-time student.

Full-time students are eligible to receive VVTA benefits for up to 8 semesters for a 4-year program, or 10 semesters if a degree program is specifically approved as requiring 5 years. (Programs of remedial study are considered to be programs normally requiring 5 years.)

Students taking courses on a part-time basis (6 to 11 credits) may receive up to 16 semesters of benefits (8 yrs.), or 20 semesters (10 yrs.) in an approved program which would normally require 5 years if the study were full time.

Full-time awards are \$500 per semester or tuition, whichever is less. If the veteran also receives a Tuition Assistance Program (TAP) award, the combination of the two awards cannot exceed tuition.

Part-time awards are \$250 per semester or tuition, whichever is less.

The total of all awards for full- and/or part-time study received cannot exceed \$5000.



General Academic Information

Semester Registration

Completion of registration each semester in accordance with instructions issued by the Registrar (Office of Records) is a prerequisite to class attendance. Although the Registrar will attempt to send individual instructions to every eligible student in advance of each registration period, changes in status and address (see p. 50) make it impossible to guarantee that every student will automatically receive these instructions. Eligible students who do not receive final registration information two weeks before the first day of classes each semester should contact the Office of Records without delay. Registration after the close of the announced final registration period in the academic calendar requires the payment of a late registration fee of \$20. Registration is not permitted after the end of the second week of classes.

With the assistance of an academic advisor, each student selects a program of courses; it is the student's responsibility to see that the program conforms with academic regulations and meets degree requirements.

Registration is not complete until all tuition, fees, and charges, which are due and payable prior to the first day of classes, have been paid or properly deferred. Nonpayment by preregistered students, however, does not constitute official withdrawal, which must be done through the Office of Records/Registrar. (See "Withdrawal," p. 49, and "Refund of Tuition," p. 26.)

Change in Course Registration

During the first ten class days a student may, within the regulations,

add or drop courses by submitting the appropriate form to the Office of Records/Registrar. No record is made of courses dropped before the end of the tenth class day. After that date, a course may be added only with the approval of the appropriate Committee on Academic Standing and Appeals (CASA; see below, "Committees on Academic Standing and Appeals").

From the eleventh class day through the ninth week of classes a student may, within the regulations, withdraw from a course (see p. 38, "Course Load," and p. 39, "Grading System"). After the ninth week, a student may withdraw from a course only by withdrawing from the University by the last day of classes, or, in exceptional circumstances, by the approval of the appropriate Committee on Academic Standing and Appeals. (See "Academic Calendar," p. 247, for specific deadline dates.) Students who obtain permission from the appropriate academic standing committee or dean to add or drop courses after the normal deadlines for doing so will be charged a fee of \$10 for each program change processed by the Registrar.

First-Week Attendance

A student registered in an undergraduate course who does not attend any classes in that course during the first full week of classes may be deregistered from that course, if there are unregistered students who wish to register, unless prior arrangements to preserve the

registration have been made by the student with the instructor. This deregistration authority is limited to the add period at the beginning of each semester. Students are not automatically deregistered in every case, however, and must act themselves to drop a course if they desire to avoid an NR (see "Grading System") in that course.

Course Load

A normal course load for full-time matriculated students is a program totaling 12 to 19 credit hours. Requests for permission to register for more than 19 credits should be submitted directly to the appropriate Committee on Academic Standing and Appeals for approval. Students may register for fewer than 12 credits without special permission through the end of the second week of classes. After that time requests to carry fewer than 12 credits should be submitted directly to the appropriate Committee on Academic Standing and Appeals.

Although the University regards full-time matriculated students who, in the third week of classes or later, have received official permission during a particular semester to carry an underload (fewer than 12 credit hours) as full-time students during said semester, some outside agencies do not. Therefore, before requesting an underload a student should determine the consequences in terms of scholarships and loans. Approval for an underload for a single semester is granted only for emergency situations that could not have been anticipated.

Students with approved underloads will be charged at the full-time tuition rate. Students who have chronic problems that make full-time study inappropriate should consider changing to part-time status. See "Full-Time/Part-Time Status," below.

After the second week of the semester, students wishing to carry fewer than 12 credits must obtain underload permission as described above. Underload petitions may not be submitted before the beginning of the third week.

Repeating Courses

Students may register again in a course for which they have already received a grade recorded as C-, D+, D, NC, U, or F or a report shown as W. (See also "Pass/No Credit Academic Record Option," p. 40, item G.) In such cases each grade is recorded and computed separately except that the credit hours earned in a given course may be counted only once toward the quantitative credit-hour degree requirements (120 credit hours for the B.A. and the B.S., 128 credit hours for the B.E.). Such a course will, however, count as part of the semester credit load. The same guideline applies to courses that have been renumbered and are listed under the new number, followed by the former number in parentheses, in the next *Bulletin* published and, until then, in the Undergraduate Bulletin Supplement. (See also p. 55 and p. 200.)

Final Examinations

The academic calendar always provides five days each semester for a final examination period and a short reading period as well. No final examinations may be given in the last week of classes without permission of the Vice Provost for Undergraduate Studies. Such permission may be granted only for compelling academic reasons.

Auditing

Auditing refers to the practice of attending a course for informational instruction only. No credit is granted for such work nor does the University keep any record of the student's participation in the course. The privilege of auditing courses is reserved for regularly enrolled students and senior citizens only. A student who wishes to audit a course should first obtain the permission of the instructor.

Full-Time/Part-Time Status

Full-time or part-time status will be determined on the basis of the number of credits for which a student is enrolled on the tenth day of classes each semester. Students registered for 1 to 11 credits are

considered part time; those registered for 12 or more credits are considered full time. *It should be noted that full-time status is an eligibility requirement for on-campus housing and most forms of financial aid.* Students are responsible for determining in advance the implications of changing their enrollment status. Requirements for satisfactory progress and good academic standing in either status are described on p. 45.

After the tenth day of classes students may change their status from full time to part time or part time to full time only with the approval of the appropriate academic standing committee.

Committees on Academic Standing and Appeals

For College of Arts and Sciences Students

Exceptions to regulations regarding such matters as registration changes, course loads, and academic standing may be made by the Committee on Academic Standing and Appeals of the College of Arts and Sciences, which operates under faculty legislation. Information about academic regulations or CASA policies and advice about individual requests to the Committee may be obtained from the Center for Academic Advising.

For College of Engineering and Applied Sciences Students

Petitions for exceptions to regulations regarding such matters as registration changes, course loads, and academic standing are considered by the Committee on Academic Standing and Appeals of the College of Engineering and Applied Sciences, which also deals with academic dishonesty and academic grievances (see below). Information about academic regulations and advice about individual requests to the Committee may be obtained from the Engineering Undergraduate Student Office.

Academic Advising

The *Center for Academic Advising*, located in the Frank Melville, Jr. Memorial Library Building, has overall responsibility for the academic advising of all new students until such time as they officially select a major. The *Engineering Undergraduate Student Office* provides specialized advising for students interested in College of Engineering and Applied Sciences professional programs. Designated faculty members from each academic department and program in both the College of Arts and Sciences and the College of Engineering and Applied Sciences are also available to advise students. All students are expected to consult the appropriate advisors before each registration (see "Prime Time for Students," below).

Prior to their first registration at the University, all new students are expected to participate in an orientation program during which, in addition to taking the English composition placement examination and a placement examination in mathematics and physical sciences, they receive academic information and advice from faculty, professional staff, and student orientation leaders. Students who have not yet selected a major are expected to consult advisors from the Center for Academic Advising and the departments for assistance in planning their academic programs. Students who have selected a major department are expected to seek assistance in academic planning from representatives of that department.

Stony Brook students interested in preparing for law school or for undergraduate or graduate health professional programs should consult advisors in the Center for Academic Advising. Those interested in the health professions may buy from the campus bookstore a copy of the appropriate "Guide for the Pre-Professional Health Student" pamphlet prepared by this office under the auspices of the Faculty Committee on Health Professions. One "Guide" details academic and other information helpful for

preparation and application to graduate health professional schools; the other focuses on undergraduate health professional programs.

Prime Time for Students

Each semester, for a period beginning a few days before Advance Registration and lasting through Advance Registration week, academic departments provide extra advising hours and schedule special events pertaining to their programs. These Prime Time for Students activities allow students to talk with faculty members about individual courses, major and minor requirements, and the appropriateness of the academic field for certain career choices. Schedules of Prime Time activities are published in the Undergraduate Bulletin Supplement, which is distributed throughout the campus prior to the beginning of Prime Time.

Class Status

As used in academic regulations, degree requirements, and some course prerequisites, class designations are defined by credits earned, according to the following schedule: freshman, 0-23; sophomore, 24-56; junior, 57-84; senior, 85 or more.

University Graduation Requirements*

All candidates for any of the bachelor's degrees conferred must satisfy all University graduation requirements, as well as the College and departmental requirements for the specific degree. University requirements for overall credit hours, grade point average, residence, upper-division credits, and writing are listed along with College requirements on p. 51 for College of Arts and Sciences students and on p. 198 for

*As the *Bulletin* went to press, the University was in the process of formulating new University Graduation Requirements for quantitative literacy and a core curriculum. When completed, these new requirements will be published in the Undergraduate Bulletin Supplement. The present expectation is that these requirements will apply to freshmen matriculating in Fall 1986 and later and to transfer students matriculating in Fall 1987 and later.

College of Engineering and Applied Sciences students. Students in the W. Averell Harriman College for Policy Analysis and Public Management, who choose their majors in one of the other core campus colleges, graduate under the requirements of the college in which the major is located.

Grading System

Final Grades and Reports of R and W

Except for year-long courses (indicated by hyphenated, consecutive numbers), a final grade is assigned each semester for every course or independent study project for which a student is registered after the second week of classes.

A student who withdraws from a course after the tenth day of the semester is assigned a report of W, indicating withdrawal.

Unless a student receives a Withdrawal report, a temporary report of Registered (described below), or a report of Incomplete or No Record in a course, one of the following final grades is assigned to the student:

- A (indicates superior work)
- A-
- B+
- B (indicates good work)
- B-
- C+
- C (indicates satisfactory work)
- C-
- D+
- D (indicates minimum passing work)
- F (indicates failing work)
- S (indicates satisfactory work)
- U (indicates unsatisfactory work)

The term "letter grade" refers to A-F grades; it never refers to S,U,P, or NC, which are explained below.

Instructors of year-long courses for which the final grade and credits are assigned only after completion of two semesters submit a report of R (Registered) at the end of the first semester. A final grade and credits for the combined semesters' work are recorded at the end of the second term. An R will also be given in certain courses where the final grade will be delayed because the coursework was

done at a location remote from the campus. For the purposes of academic standing an R is treated as if it were a P.

A student who withdraws from a course after the tenth day of the semester is assigned a permanent report of W. The W carries no academic implications beyond the fact that a student has withdrawn from a course.

In the event that an instructor discovers that he or she has made a grading error, the instructor may request a correction of the final grade. Such requests are subject to approval by the appropriate dean.

Final grades appearing on a student's academic record may not be changed after one calendar year from the start of the term in which the grade was incurred. Exceptions may be made if the instructor is on leave in the term following the one in which the grade is assigned or if the student is on leave because of illness in that term. A final grade may not be changed on the basis of work completed after a term has ended. Final grades appearing on a student's academic record at the time of his or her graduation cannot be changed to any other grade subsequent to the graduation date.

Temporary Reports of I and NR

If, because of circumstances beyond his or her control, a student is unable to complete the work for a course on time, the student is responsible for promptly informing the instructor before the end of the course, or if this is not possible, at the earliest opportunity thereafter. When informed of these circumstances, at his or her discretion, the instructor may assign a temporary report of I (Incomplete), which signifies that the student has been granted additional time in which to complete the requirements for the course. An Incomplete report is treated as a failure for the purposes of determining academic standing. After granting an I the instructor will set a date for completion no later than November 1 for courses in the preceding spring semester or summer session and no later than March 15 for courses in the preceding fall semester. (These deadlines do not apply to students who have been dismissed because of



Incompletes and wish to have the dismissal rescinded. See "Academic Standing," p. 45.) An Incomplete may not be made up by auditing a subsequent offering of the course. If circumstances beyond his or her control prevent the student from completing the work by the deadline set by the instructor, the student must notify the instructor promptly and request an extension of the Incomplete. At his or her discretion, the instructor may request an extension of the original Incomplete by written notification to the Registrar. Any extension will normally be limited to the last day of classes of the semester following that in which the course was taken. Longer extensions for extraordinary reasons must be approved by the appropriate dean. If the instructor does not report the final grade by the applicable or extended deadline, the final grade of I/F, U, or NC, as appropriate, will be assigned. The grade of I/F will be averaged as F when computing the G.P.A. or determining other aspects of the academic standing of the student.

A student is responsible either for completing the required work in or withdrawing from every course for which he or she has been registered. If an instructor finds that a student appears on the final grade roster for a course but has no record of that student's ever having participated in the course, the instructor may assign a temporary report of NR (No Record) for that student. An NR may not be assigned for any other reason. An NR is a temporary indication of a state of affairs requiring prompt resolution by the student; it is treated as a failure for purposes of determining academic standing. If the NR has not been replaced by either a W or a final grade by November 1 for courses in the preceding spring semester or summer session or by March 15 for courses in

the preceding fall semester, the NR will be changed to an N/F, U, or NC, as appropriate. The grade of N/F will be averaged as F when computing the G.P.A. or determining other aspects of the academic standing of the student. If the student was actually in the class, he or she must ask the instructor to correct the record by submitting a final grade to replace the NR. If the student never attended the class, he or she must petition through the appropriate dean to have the NR replaced by a W.

No student will be permitted to graduate with an I or NR on his or her academic record. Degree candidates wishing to make up incomplete work must file an application to postpone their graduation until the end of the following term. The deadlines for such applications are the same as the deadlines for initial degree applications as stated in the academic calendar.

Pass/No Credit Academic Record Option

Within the limit noted below and with the possible exception of courses in the major program, a student may elect to have the final grade in any course recorded on the official academic record either as P (Pass) if the reported grade is A, A-, B+, B, B-, C+, C, C-, D+, or D, or as NC (No Credit) if the reported grade is F. The following provisions reflect the intent of this option, which is to permit exploration of less familiar areas of study without weakening standards of evaluation or masking a record of poor performance.

- A. No more than 20 percent of all credits taken at Stony Brook, including F, U, and NC courses (but excluding courses in which a W is received) may be taken for P/NC.
- B. Election of the P/NC option is limited to the first nine weeks of each semester. After the specified date as shown in the academic calendar, no changes either to or from the P/NC option may be made.
- C. The Office of Records/Registrar does not communicate to the instructor in a course the names of students who elected the P/NC option.

- D. The requirements for a major program may make the P/NC option unavailable in a course used to meet requirements for that major. Major departments and programs may not require a student to repeat a course in which a P was obtained, when that course was taken before the major was declared. They may, however, require a more advanced course to be taken in lieu of a required course in which a grade of P was recorded. Specific information may be obtained from the department or other agency that supervises the program.
- E. Courses graded P are not considered among the minimum of 12 credits required for a student to be included in the Dean's List. (See p. 48.)
- F. Academic departments may (but are not required to) prevent students who have declared a major from electing the P/NC option for courses that their major requires to be taken for a letter grade.
- G. A student may not repeat a course with a grade recorded as P unless the assigned grade was C- or below. A student who intends to enter a professional or graduate school program may be advised not to elect the P/NC option in certain courses or fields of study. The appropriate advisor should be consulted.

Satisfactory/Unsatisfactory Grading

The curriculum committees of the College of Arts and Sciences and of the College of Engineering and Applied Sciences have the authority to approve the offering of certain courses on a Satisfactory/Unsatisfactory grading basis, where finer grading distinctions are impractical. The only grades given in such courses will be S and U. The grading policy for each course is to be announced in the description of the course in the *Undergraduate Bulletin*. For the purposes of determining academic standing, the S/U grade shall be equivalent to P/NC. Students may not elect to take such a course for P/NC. Because students have no other grading option in S/U courses, S/U grades count among the 80 percent of all Stony Brook credits that must be taken for a letter grade.

Grade Point Average

For the purpose of determining the grade point average specified in degree requirements, grades are assigned point values as follows:

A	= 4.00
A-	= 3.67
B+	= 3.33
B	= 3.00
B-	= 2.67
C+	= 2.33
C	= 2.00
C-	= 1.67
D+	= 1.33
D	= 1.00
F	= 0.00

Other grades do not enter into the grade point average, nor do course credits transferred from other institutions. For a collection of courses with quantitative grade values as shown above, the grade point average is found by multiplying the number of credit hours for each course by the point value of the grade assigned, adding the results, and then dividing by the sum of the credit hours for all of the courses.

Semester Grade Reports

Grade reports, which are advisory, are prepared shortly after the conclusion of each semester and mailed to students. (See "Change of Address," p. 50.) Credit for repeated courses is included in the cumulative credits shown, even though not all such credits may ultimately count toward the degree.

Transcripts

Students who desire transcripts of their academic record at Stony Brook, either for their own use or for forwarding to some other institution or agency, must submit a written request to the Office of Records/Registrar at least seventy-two hours before the transcript is needed. A form for this purpose is available from the Registrar, but requests may also be made by letter. The charge for transcripts is \$3 per copy. Payment should be made directly to the Bursar's Office. If applying by mail, the request and check payable to *SUNY at Stony Brook* should be sent to the Bursar's Office, P.O. Box 619, Stony Brook, NY

11790-1351. Partial transcripts of a student's record are not issued. Transcripts will only be released if the student's financial record shows no outstanding obligations.

Selection and Change of Major, Selection of Area of Interest, Addition of a Second Major

Limitation of Acceptance into Majors

It is the University's policy to make available to all students the widest possible variety of major programs. It is also the University's policy to maintain the academic quality of its programs at a high level. In times of fiscal stringency, if student demand for certain major programs increases rapidly, these two policies may conflict. In such cases, acceptance into these majors may be limited. This will be done, however, only after the faculty and administration have determined, by means of an established procedure, that available resources, though well utilized, are insufficient to protect program quality without limiting acceptance.

Once students have been accepted into a limited acceptance major program, they will continue in that program (if they so choose) as long as they meet College and University requirements for matriculation or graduation.

Procedures

The declaration-of-major procedures outlined below will provide information to improve academic advising throughout the campus, to plan properly for allocating and shifting resources, and to guide students toward serious consideration of their educational goals from their freshman year on, without prematurely pressuring them to declare a major when they are genuinely undecided.

A. Declaration of Area of Interest

All newly admitted freshmen, except those accepted into majors with approved limited access, are placed in the GEN (general freshman) category. At Freshman Orientation they are encouraged (but are not required) to declare one of the following areas of interest:

- GAH - pre-Allied Health Professions
- GAM - pre-Applied Mathematics and Statistics
- GCS - pre-Computer Science
- GEE - pre-Electrical Engineering
- GES - pre-Engineering Science
- GFH - pre-Fine Arts and Humanities
- GME - pre-Mechanical Engineering
- GNS - pre-Nursing
- GSB - pre-Social and Behavioral Sciences
- GSC - pre-Natural Sciences and Mathematics
- GSW - pre-Social Welfare

New freshmen who do not wish to declare an area of interest will remain in the GEN (general freshman) category.

Each student must declare an area of interest at the point of registering for the first semester of the sophomore year (i.e., at Advance Registration in the second freshman semester) if he or she has not already declared either a specific major or an area of interest. Failure to declare either an area of interest or a major at this time will result in losing priority in registration. New transfer students who matriculate as sophomores or higher must declare either a major or an area of interest on registering for their first semester at Stony Brook. Students who have declared an area of interest may change to another area of interest if their intentions change. Continuing students who have earned 85 credits or more may not retain an area of interest; at that point they must declare a major.

Declaration of an area of interest indicates a student's expectation; it does not guarantee a place in any limited-acceptance major.

The Change-of-Major/Minor/Area of Interest Declaration form, available from the Office of Records/Registrar, is used to designate an area of interest officially; an advisor's signature is not required.

B. College of Arts and Sciences Majors

Freshmen in the College of Arts and Sciences usually wait to select a major officially until after they have had an opportunity to test various academic interests by taking college-level courses in those fields. They may, however, declare a major as early as the

Advance Registration period for their second semester.

All students are expected to declare a major no later than the end of the second semester of their sophomore year or before attaining upper-division status. Failure to do so will result in losing priority in registration each semester until a major is declared. It may also result in a delay in meeting graduation requirements. The Change-of-Major/Minor/Area of Interest form available from the Office of Records/Registrar is used to designate a major officially; the signature of a departmental advisor is required. Students should not attempt to record both a specific major and a GFH, GSB, or GSC area of interest.

Students whose first choice of major is in one of the Engineering and Applied Sciences or Health Sciences programs and who have not been accepted into the major of their choice by the end of the sophomore year are expected to choose a major in the College of Arts and Sciences. Should the student subsequently be accepted into the College of Engineering and Applied Sciences or the Health Sciences Center, the originally declared major may be changed or completed under the double major or double degree regulations (see below). Continuing students who expect to apply to an Engineering and Applied Sciences or Health Sciences undergraduate program after declaring an Arts and Sciences major may retain the appropriate area of interest along with the major until they have earned 85 credits. At that time, if they have not been accepted into the major related to their area of interest, they must drop the area of interest.

Students who have declared a specific major may change majors at any time up to graduation. In order to do this they should discuss the change with an advisor in the desired program and secure his or her signature on a Change-of-Major/Minor/Area of Interest form and return it to the Office of Records/Registrar.

C. College of Engineering and Applied Sciences Majors

Engineering: Some freshmen and transfer students who indicated an

interest in a Bachelor of Engineering program on their application to the University are accepted directly into the electrical engineering, mechanical engineering, or engineering science major when they are admitted to the University. Continuing students may apply for acceptance into the engineering science or the mechanical engineering major after their first semester at Stony Brook; electrical engineering applicants will be considered after two semesters. (For further details about acceptance into the electrical engineering major, see p. 210.) Application for these programs is made through the Engineering Undergraduate Student Office during Prime Time each semester.

Applied Mathematics and Statistics: Freshman and transfer applicants to the University may be accepted directly into the major in applied mathematics and statistics upon admission to the University. Those who did not apply for the major and those who were not accepted into the major when they entered the University may apply only after completion of a prescribed set of courses (see p. 202).

Computer Science: A limited number of high-achieving freshman applicants, who must specify their interest on their application, will be accepted into the computer science major upon admission to the University. Other students must complete a prescribed set of courses before acceptance into the major (see p. 205). Transfer students may apply for acceptance into the major only after completing at least one semester at Stony Brook.

The College of Engineering and Applied Sciences officially designates the major for all students accepted into the five majors noted above. The Change-of-Major/Minor/Area of Interest form is *not* used.

Declaration of an area of interest related to one of the Engineering and Applied Sciences majors does not guarantee later acceptance into the major.

D. Health Sciences Center Majors

Some freshmen who indicated an interest in a Health Sciences Center program on their application to the University are accepted directly into the appropriate major when they are admitted to the University. Continuing and transfer students who wish to enter

one of the upper-division programs in the Health Sciences Center must apply for admission to that program during the fall semester and be formally accepted in the spring. Applications to Health Sciences programs may be submitted in the sophomore year or later. Admission to any of the Health Sciences Center programs is not accomplished through the declaration form mechanism.

Declaration of an area of interest related to one of the Health Sciences majors does not guarantee later acceptance into the major.

E. Advising for Declaration

The Center for Academic Advising is primarily responsible for advising students in the GEN and all area-of-interest categories, although academic departments will be called on to advise students seeking information about their majors and courses.

Academic departments are responsible for advising interested students about their courses and majors, signing students into majors, and advising students about their entire academic program once the major has been declared.

Double Majors

Students who wish to complete two majors within one baccalaureate degree must obtain the approval of the two departments involved. The Change-of-Major/Minor/Area of Interest form is used for adding a second major in all cases where that second major is in the College of Arts and Sciences. This form is not used if the second major is in the College of Engineering and Applied Sciences; instead, the college administration will officially designate the second major.

Double majors may be composed of any two majors in the College of Arts and Sciences or any Arts and Sciences major with either Computer Science or Applied Mathematics and Statistics. Within the College of Engineering and Applied Sciences double majors may be formed of Computer Science and Applied Mathematics and Statistics or by adding either to any one of the engineering majors. It is not possible to have two engineering majors. Students accepted into the School of Allied

Health Professions may pursue either a double major or a double degree with an Arts and Sciences major. Any other combination of majors involving a Health Sciences Center program must be pursued as a double degree (see "Two Baccalaureate Degrees," below).

When a double major includes one Bachelor of Science program in the College of Arts and Sciences and one in the College of Engineering and Applied Sciences, the student may fulfill either college's set of graduation requirements. If, however, the Arts and Sciences major is one that leads to a Bachelor of Arts, students must decide which degree they wish to be awarded. In this case, the graduation requirements of the College of Arts and Sciences would have to be satisfied if the Bachelor of Arts is chosen; the graduation requirements of the College of Engineering and Applied Sciences would have to be satisfied for the Bachelor of Science.

Whatever the pair of majors, the number of credits taken to fulfill the requirements of both must total at least 60. Students wishing to pursue a concentration in a third area should consider selecting a minor.

Declaration of Minor

Although students are not required to pursue a minor in order to graduate, a number of minors are available for those wishing to select them. The Change-of-Major/Minor/Area of Interest form is used to designate a minor officially; the signature of the minor coordinator is required.

Two Baccalaureate Degrees

Under certain circumstances major programs pursued in two of the three basic academic units offering baccalaureate degrees can result in the awarding of two bachelor's degrees to the same student.

Bachelor of Engineering and Bachelor of Arts or of Sciences

Qualified students whose special interests and career plans make such study appropriate may be granted permission to earn two degrees at the undergraduate level by planning a program that leads to a Bachelor of Engineering degree and a Bachelor of Arts or a Bachelor of Science degree offered by the College of Arts and Sciences. Written approval to undertake

this curriculum must be obtained from the Engineering Undergraduate Student Office and the Center for Academic Advising subject to review and final authorization by the Vice Provost for Undergraduate Studies. In addition to meeting all University graduation requirements and the distribution and proficiency requirements of both Colleges, the candidate for two degrees must earn a total of 144 credits and must fulfill the requirements of the Bachelor of Engineering degree and the requirements of either a Bachelor of Arts or a Bachelor of Science degree.

Health Sciences and Arts and Sciences

Students at Stony Brook may simultaneously earn baccalaureate degrees from both the College of Arts and Sciences and the Health Sciences Center if they have been admitted formally to each unit and fulfilled the criteria and requirements outlined below. Written approval to undertake this curriculum must be obtained from the dean of the Health Sciences School in which the student is enrolled and from the Center for Academic Advising subject to review and final authorization by the Vice Provost for Undergraduate Studies. The double degree may include either a Bachelor of Arts or a Bachelor of Science degree from the College of Arts and Sciences and a Bachelor of Science degree from the Health Sciences Center.

The second baccalaureate degree will be given only when: (1) a concentration in the second field has been completed in a time span greater than that required for one degree, i.e., normally five years of full-time study; and (2) a candidate has competencies in two essentially different areas of specialization, i.e., in a Health Sciences Center program and a College of Arts and Sciences major.

To earn credit toward a second degree a student must fulfill the following requirements: (1) minimum total credits, 144; (2) minimum liberal arts credits, 90; (3) the distribution and proficiency requirements of the College of Arts and Sciences (the completion of which also satisfies the general University requirements of the Health Sciences Center); (4) minimum Stony

Brook liberal arts credits, 36, of which at least 15 must be in upper-division courses; (5) minimum Health Sciences Center credits as determined by the department and school of the selected major; and (6) minimum quality point average and minimum unduplicated coursework as required for each degree.

Only double degrees, not double majors, may be earned by students studying jointly in the Schools of Nursing or Social Welfare and the College of Arts and Sciences. Students in the School of Allied Health Professions may earn either a double degree or a double major. For a double major, all current guidelines and regulations apply except that the distribution requirements are those currently in effect for Health Sciences Center programs.

Baccalaureate Credit Options

Challenge Program for Credit by Examination*

The University's Challenge Program permits matriculated undergraduates to earn advanced placement and credit by taking examinations in place of regular courses. Each department determines the courses for which it will offer Challenge examinations. No student may take a Challenge examination in a course that is a prerequisite for a course already passed. Although a student may earn up to a total of 30 credits by examination, including both Challenge and approved external examinations, credit may be accumulated through the Challenge Program alone in no more than five courses. Challenge credit may not be used to fulfill the residence requirement of 36 credits earned at Stony Brook after the 57th credit has been completed, nor does it count as part of the semester credit required for good academic standing. In addition, Challenge credit may not be used to satisfy the 60 credits in residence required of candidates for degrees with distinction. Written guidelines describing in detail the procedures and regulations governing Challenge credit are available in the Center for Academic Advising.

Study at Other Institutions**

Subject to certain limitations and conditions, course credit earned at other institutions either before or after matriculation at Stony Brook may be applied to meet Stony Brook degree requirements. Courses taken at colleges offering only two-year (lower-division) programs are presumed to be lower-division courses, except for a few that have previously been designated as upper-division courses by a Stony Brook department with the approval of the College's curriculum committee. Upper-division credit for courses transferred from four-year colleges will be granted only on a course evaluation basis and only on the written approval of the undergraduate director of a department that might offer such a course. Only courses for which a grade of C or higher is recorded will be granted upper-division credit.

Once a student has matriculated, prior approval normally will be required before he or she may take an upper-division course for credit at another institution. For Arts and Sciences students this is handled by the Undergraduate Admissions Office, which should be consulted by currently enrolled Stony Brook students before work is undertaken at any other institution. Engineering and Applied Sciences students must receive a departmental advisor's approval before taking a course elsewhere.

Summer Study Elsewhere

To ensure that projected courses will be fully acceptable for transfer credit, students planning to take summer courses elsewhere should discuss plans in advance with both the academic advisor and the Stony Brook Undergraduate Admissions Office, where they can obtain assistance in filling out a form listing the intended courses and their Stony Brook equivalents. After the Undergraduate Admissions Office receives an official transcript indicating that the student has completed the courses with a passing grade, appropriate transfer credit will be granted.

*See also p. 21, "Advanced Standing by Examination."

**See also p. 19, "Transfer Credit Policies."

Visiting Student Program

A statewide program enables interested Stony Brook students to study for a semester or a year at one of more than 50 participating colleges and universities in New York State. The Visiting Student Program is approved by the State Education Department and full transferability of Regents Scholarships is assured. The unique purpose of the program is to allow students to explore possibilities of academic life in a variety of settings ranging from small and possibly specialized institutions to large academic communities such as Stony Brook.

To qualify for the program students must have the advance approval of an academic advisor or department chairperson and an official statement from the Office or Records/Registrar that they are in good academic standing. Students must accept full responsibility for tuition, fees, and any similar charges in effect at the host school. A "Withdrawal/Leave of Absence" form must be completed prior to leaving Stony Brook.

Application forms and additional information about the Visiting Student Program may be obtained at the Undergraduate Admissions Office; however, some campuses require the completion of supplementary forms that must be secured directly from their admissions offices. Admission on each campus is usually on a competitive, space-available basis.

Stony Brook students may also explore the possibility of attending colleges outside New York State as visiting students. Advance approval of courses and a leave of absence are required to ensure readmission to Stony Brook at the end of one or two semesters.

Study Abroad

Qualified students may spend a summer, a semester, or a full academic year as participants in a study abroad program sponsored by the State University of New York. Study abroad offers alternative social and cultural perspectives on studies in the humanities and social sciences and supplements offerings of the University in area studies; many programs provide an opportunity to gain proficiency in the use of a foreign language. Students may select from among a variety of

programs available in most countries in Western and Eastern Europe, the Middle and Far East, Canada, the Caribbean, and Latin America.

Participating in a semester- or year-long study abroad program requires advance planning. Quite often there are academic prerequisites to these programs. Because the courses available through the programs are more limited than the selections offered on campus at Stony Brook, students who hope to study abroad should project a plan of study that will allow them to complete University, College, and major requirements within an acceptable number of semesters. Interested students should seek information and advice about study abroad in the International Programs Office.

Academic Standing

This information applies to all students in the Colleges of Arts and Sciences and Engineering and Applied Sciences.

Minimal acceptable academic progress is measured in terms of the rate at which course credit is earned, the semester grade point average, and the cumulative grade point average at the end of the semester. The number of credit hours earned in a semester is the total number of credit hours assigned to courses with recorded grades of A, A-, B+, B, B-, C+, C, C-, D+, D, S, P, or R. Academic progress will be reviewed at the end of each semester and students will be placed on notice or will be dismissed as the record warrants. A student who has not been dismissed under criterion C or D below, is considered to be in good academic standing. Any student dismissed for academic reasons may apply to the appropriate Committee on Academic Standing and Appeals for termination of that dismissal and, if approved, apply for readmission after a minimum of one semester's absence from the State University of New York at Stony Brook. The appropriate Committee is the one serving the College to which the student wishes to apply. The student may not apply to more than one academic standing committee for a given semester.

Academic standing is determined first by credits earned—the quantity standard. Incomplete (I) or No Record (NR) reports or Failure (F), Unsatisfactory (U), or No Credit (NC) grades do not count as earned credits. Second, the quality of work is considered. The quality standard entails the achievement of at least the semester grade point average or the cumulative grade point average appropriate to the student's class status as shown on the following chart.

Quantity Standard

<i>Class Standing (determined by credit accumulated prior to beginning of semester)</i>	<i>Minimum credits in any one semester*</i>
Freshmen (0-23 credits)	9
Sophomores (24-56 credits)	12
Juniors (57-84 credits)	12
Seniors (85 or more credits)	12

Quality Standard

<i>Minimum semester G.P.A.</i>	<i>or</i>	<i>Minimum cumulative G.P.A. at end of semester*</i>
Freshmen 1.20		**
Sophomores 2.00		1.60
Juniors 2.50		1.80
Seniors 2.50		2.00

- Any student who in a semester fails to meet the *Quantity* standard for his or her class status will be placed *On Notice*.
- Any student who meets the quantity standard but who fails to meet at least one of the *Quality* standards for his or her class status will be placed *On Notice*.
- Any student eligible for a *Second Consecutive Notice* will be Dismissed.
- Any student eligible for a *Third Notice* will be Dismissed.
- Any student who is *On Notice* solely because Incomplete (I) reports have resulted in too few earned credits or an insufficient grade point average will have the *Notice* rescinded if he

*Credits shown are for full-time students. *Part-time matriculated students* must complete two-thirds of the total number of credits attempted in any one semester; they must meet the same quality standard as full-time students.

**Freshmen must meet minimum semester G.P.A.

or she meets the minimum requirements by completing the courses before the published deadline for doing so. A student who has been *Dismissed* because of Incompletes must complete sufficient credits (and achieve the minimum G.P.A. or cumulative G.P.A.) by the date specified in the dismissal letter in order to have the dismissal rescinded. The effective date of the dismissal is stated in the dismissal letter.

Academic Dishonesty

Intellectual honesty is the cornerstone of all academic and scholarly work. Therefore the University views any form of academic dishonesty as a serious matter. The Academic Judiciary Committee for the College of Arts and Sciences and the Committee on Academic Standing and Appeals of the College of Engineering and Applied Sciences are responsible for enforcing the guidelines for dealing with academic dishonesty in each College and for the consideration of individual cases, either initially or on appeal. The judiciary committee of the college in which the course concerned is given has jurisdiction in every case. Either committee may inform preprofessional committees about any findings of academic dishonesty which, in the judgment of the Academic Judiciary Committee (or Committee on Academic Standing and Appeals), are of sufficient seriousness to justify their release to these committees. Detailed procedures for hearings and other functions of these committees are available in the Center for Academic Advising and in the Engineering Undergraduate Student Office.

Academic Grievances

The Academic Judiciary Committee for the College of Arts and Sciences and the Committee on Academic Standing and Appeals in the College of Engineering and Applied Sciences consider complaints of arbitrary, capricious, malicious, or otherwise improper actions related to grading and other evaluations; assignments, examinations, and other requirements for credit; or any other academic

matters. While such grievances are most often brought by students against instructors, the committees will consider grievances involving any member of the academic community on the core campus. The committees, however, cannot intervene in matters covered by the procedures set forth in the Policies of the Board of Trustees, the Rules for the Maintenance of Public Order, or the collective bargaining agreement between the State and United University Professions (the faculty-staff union).

The committees consider only charges of clearly improper academic practices; they will not intervene in disagreements about an instructor's intellectual judgment. Grievances should be brought to a committee only after other avenues of redress (e.g., discussion with the instructor and department chairperson) have been pursued without success. Grievances should be put in writing, including names, dates, and other pertinent details, and should be submitted to the appropriate committee within two months after the beginning of the semester following the alleged impropriety. Further information about academic grievance procedures may be obtained from the Center for Academic Advising or the Engineering Undergraduate Student Office.

Awards and Honors

The University pays tribute to its outstanding students through the conferring of awards and scholarships, election to honorary societies, granting of degrees with distinction and departmental honors, and selection for the Dean's List. The following University awards are presented each year. Additional information concerning these awards is available in the Center for Academic Advising.

University Scholarships

The Stony Brook Foundation presents these awards for four years to students beginning their freshman year at Stony Brook who have demonstrated exceptional academic promise. The University Scholarships are made possible by major endowment fund gifts from Cecil L. and Claire D. Hall, Leonard Spivak, Mrs. Othmar H. Ammann, and the Republic Aviation Corporation.

Distinguished Transfer Scholarships

The Distinguished Transfer Scholarships, established by the Stony Brook Foundation, are presented to entering transfer students in recognition of prior outstanding academic performance.

Ward Melville Valedictorian Award

In honor of its first Chairperson, the Council of the State University of New York at Stony Brook annually presents through the Stony Brook Foundation the University's most distinguished undergraduate honor, the Ward Melville Valedictorian Award, to the graduating senior who has attained the highest academic average during four years at Stony Brook.

H. Lee Dennison Valedictorian Award

The H. Lee Dennison Valedictorian Award, named in honor of Suffolk County's first chief executive, is presented by the Council of the State University of New York at Stony Brook through the Stony Brook Foundation to the graduating senior who entered Stony Brook as a transfer student, completed at least 60 credits of letter grade work at Stony Brook, and attained the most outstanding academic record at Stony Brook in that work.

William J. Sullivan Award

The William J. Sullivan Award is presented annually by the Council of the State University of New York at Stony Brook through the Stony Brook Foundation in honor of Justice William J. Sullivan, former Chairperson of the Council. The Sullivan Award is the most prestigious service award the University presents to a graduating senior. It represents the University's recognition of particularly outstanding service contributions to the development of academic and student life on the campus.

The Distinguished Community Service Award

The Distinguished Community Service Award is presented annually by the Stony Brook Foundation to a graduating senior in recognition of particularly outstanding contributions to public service in the Long Island region.

Richard B. Moore Scholarship

The Richard B. Moore Scholarship, established by the Stony Brook Foundation to honor the memory of the distinguished civil rights activist and historian, provides annual recognition for a Stony Brook student of African heritage with outstanding academic potential.

The Sidney Gelber Senior Energy Policy Award

The Stony Brook Foundation annually presents the Sidney Gelber Senior Energy Policy Award to an interested and talented undergraduate student who will be involved in independent energy research during the senior year. The award is named in honor of the former Academic Vice President of the University.

Junior Class Award

The Junior Class Award is presented annually by the University Association of the State University of New York at Stony Brook to two outstanding juniors in recognition of academic excellence and personal contributions to the University community.

The Health Sciences Undergraduate Award

The Health Sciences Undergraduate Award is presented annually by the University Association of the State University of New York at Stony Brook to a junior in the Health Sciences Center for academic excellence and outstanding, nonacademic service activities on campus and in the community.

GEICO Achievement Award

The GEICO Achievement Award is presented annually by the Government Employees Insurance Company to an outstanding sophomore or junior majoring in an insurance-related field.

The Mortimer Kreuter Scholarship

The Mortimer Kreuter Scholarship is awarded each year by a Fund committee to a mature person who needs financial assistance in order to return to or continue his or her undergraduate or graduate education.

The Elisabeth Luce Moore Fellowship

The Elisabeth Luce Moore Fellowship in International and Religious Studies is presented annually by the Stony Brook Foundation to a deserving Stony Brook student who demonstrates outstanding academic potential and gives promise of contributions of unusual stature to the fostering of international understanding and/or to the appreciation of religious values.

The George B. Costigan Scholarship

The George B. Costigan Scholarship is presented annually by the Council of the State University of New York at Stony Brook through the Stony Brook Foundation in honor of George B. Costigan, retired chairperson of the Council. This scholarship is presented to a junior or senior at the State University of New York at Stony Brook who is a graduate of one of the two-year colleges on Long Island and who has best used the enrollment at that college to mature in character, awareness, and learning—in fulfillment of the University's motto, "To Learn—To Search—To Serve."

The Society of American Military Engineers Award

The Society of American Military Engineers Award is presented annually by the New York City S.A.M.E. Post to an engineering student who has demonstrated by scholastic performance a potential for further engineering study and practice and who may be in financial need.

Faculty-Student Association Campus Life Award

The Faculty-Student Association awards a scholarship in recognition of outstanding contributions to the quality of campus life. Awards are given to students in good academic standing who have created or revitalized programs or projects that meet evident needs of the campus community, serve a large number of people, and have the potential to continue in future years.

Raymond F. Jones Award

This award is presented annually by the Stony Brook Foundation in memory of Raymond F. Jones, Professor of Biology and Director of International Programs. In alternating years the award is presented to an exchange student who

has made an outstanding contribution in scholarly achievement, creative endeavor, or teaching excellence. Alternatively, it is presented to a student in the Division of Biological Sciences in recognition of outstanding academic accomplishments.

The Grumman-Tau Beta Pi Award

The Grumman-Tau Beta Pi Award is presented annually by the Grumman Aerospace Corporation to the member of Tau Beta Pi who in the junior or senior year has performed outstanding service to the College of Engineering and Applied Sciences.

The Sperry Scholastic Achievement Award for Long Island

The Sperry Scholastic Achievement Award for Long Island is presented annually to an electrical engineering or computer science student who, on completion of the junior year, has demonstrated academic excellence. The award includes a summer internship at the Sperry Corporation.

Elizabeth Couey Scholarship

The Elizabeth Couey Scholarship is awarded by the Stony Brook Alumni Association to a junior in good standing who has been active in campus affairs and who has done the most to foster communication and bridge understanding among students; faculty, and administration.

The Yacub E.L. Shabazz Award

The Yacub E.L. Shabazz Award is presented annually by the S.A.I.N.T.S. to the outstanding upper-division minority student who has demonstrated a high level of commitment to community service.

Ashley Schiff Scholarship

The Ashley Schiff Scholarship is awarded annually by the Stony Brook Alumni Association to a sophomore in good standing who has made significant contributions to campus life and/or made contributions toward conserving and preserving the local environment.

S.A.I.N.T.S. Founders Award

The S.A.I.N.T.S. Founders Award is presented annually to the outstanding minority student in the natural sciences, mathematics, or engineering in recognition of the founders of the S.A.I.N.T.S.

Class of 1970 Scholarship

The Stony Brook Alumni Association presents the Class of 1970 Scholarship to a freshman in good standing who has made the most significant contribution to the University.

Graduate Fellowship Awards

The S.A.I.N.T.S. presents the Graduate Fellowship Awards annually to recognize exceptional minority students who are about to enter a graduate study program.

Elizabeth D. Couey Award

The State University of New York at Stony Brook presents the Stony Brook Union Elizabeth D. Couey Award annually in memory of the first Coordinator of Student Activities. This award is presented to the graduating senior who exemplifies those qualities which made Elizabeth D. Couey unique and the most human of beings: to listen with understanding, to guide without boundaries, to give and take with love, and to grow with the passing of each day.

Outstanding Achievement Award

The S.A.I.N.T.S. presents two awards to freshmen, two awards to sophomores, and two awards to juniors to recognize outstanding black and Hispanic students who are completing their freshman, sophomore, or junior year at Stony Brook.

The Martin Buskin Memorial Award

The Martin Buskin Memorial Award is presented annually by the Stony Brook Foundation to the Stony Brook student who most exemplifies the qualities of journalistic integrity, scholarship, and deep concern for education.

President's Art Acquisition Prize

The President's Art Acquisition Prize is awarded annually to one or more senior art majors whose works, in the judgment of the studio art faculty, demonstrate originality, imagination, and mastery of craft. The art works selected become part of the University's permanent collection and are displayed in University offices.

Excellence in Creative Writing Award

This award is presented annually by the Stony Brook Foundation to a student who demonstrates exceptional talent and promise as a creative writer in fiction, poetry, or playwriting.

Phi Beta Sigma Fraternity Merit of Excellence Award

This award is presented annually by the Mu Delta Chapter of the Phi Beta Sigma Fraternity to a minority student completing the sophomore year who has shown a high level of commitment to community service.

Sigma Beta Creative and Scholarly Achievement Award

Presented annually by Sigma Beta, Stony Brook's Freshman Honor Society, this award serves to encourage creative and scholarly work among undergraduates.

Sigma Xi Excellence in Scientific Research Award

This award, presented annually by the Stony Brook Chapter of Sigma Xi, honors the outstanding research accomplishments of undergraduate students in the sciences.

Undergraduate Excellence Recognition Awards

Sponsored by the Student-Faculty-Staff Forum, these awards recognize the special achievements of undergraduates who have demonstrated excellence in a wide range of categories including, but not limited to, the performing and creative arts, academic research, leadership, and service to the campus community.

Senior Leadership and Service Awards

These awards are presented annually by the University to graduating students who have exhibited outstanding leadership and service to the campus community.

Nominations for State, National, and International Awards

In addition to selection of recipients for the above named scholarships and awards, the University nominates candidates for national and international awards such as: the *Rhodes Scholarships*, the *Mellon Fellowships in the Humanities*; the *Luce Scholars*

Program; the *Herbert H. Lehman Graduate Fellowships*; *Fulbright Grants for Graduate Study Abroad*; the *Harry S. Truman Scholarship Program*; *Rotary Foundation Scholarships*; and the *Empire State Mathematics and Science Teacher Scholarship Program*.

Departmental Awards

Department awards include:
Chemistry—CRC Freshman Award, Emerson Award to Outstanding Junior, American Institute of Chemists' Senior Award. *Earth and Space Sciences*—Myron Fuller Award for the outstanding student majoring in geology, and Sherman Raftenberg Award for the outstanding student majoring in astronomy. *Electrical Engineering*—Ebasco Scholarship to a student entering the senior year who has demonstrated scholarship, merit, and interest in the power industry. *French*—French Cultural Institute Awards to outstanding graduating majors. *Hispanic Languages and Literature*—Award for Excellence in Undergraduate Research or Creative Endeavor. *History*—Staudenraus Award. *Italian*—Dante Medal to the best graduating major, Italian Cultural Institute prizes to the best student of Italian on each level. *Judaic Studies*—B'nai Zion Medal for Proficiency in Hebrew. *Mechanical Engineering*—Ebasco Scholarship to a student entering the senior year who has demonstrated scholarship, merit, and interest in the power industry. *Physical Education*—Athletic awards presented to intercollegiate athletes for their outstanding achievement in sports. *Physics*—the John S. Toll Prize to the outstanding graduating physics major. *Psychology*—Awards presented to graduating majors outstanding in research, community service, and academic performance. *Slavic Languages*—Zoltan and Cele Paldy Memorial Award for Excellence in Slavic Studies. *Sociology*—Outstanding Scholarship Award and Outstanding Service Award to graduating majors. *Theatre Arts*—John Gassner Memorial Award in Dramatic Criticism.

In addition, the Stony Brook Foundation presents awards at commencement to undergraduate

students demonstrating high academic achievement as determined by their departments.

Honor Societies

Besides the annual awards listed above, induction into an honor society acknowledges the student's outstanding academic performance.

Sigma Beta is Stony Brook's freshman honor society. Membership is based on the attainment of a 3.5 grade point average as a full-time student in the first semester of the freshman year, using the same criteria as for the Dean's List, below.

Phi Beta Kappa is a national honor society devoted to the promotion of scholarly attainment in liberal arts and sciences. Election to Phi Beta Kappa is based not only on high grades but also on breadth, balance, and proportion in the candidates' programs.

Sigma Xi is a national honor society for achievement in pure or applied scientific research. Any student associated with the State University of New York at Stony Brook who has through initial research achievements shown a marked aptitude for research which is expected in due course to lead to the fulfillment of the requirements for full membership may be nominated and elected as an Associate Member of Sigma Xi.

Tau Beta Pi is the national honor engineering society devoted to honoring students for academic excellence and for service to the engineering profession. Engineering juniors and seniors who have demonstrated these qualities are invited to join Stony Brook's Omicron Chapter of Tau Beta Pi.

Various disciplines have their own honor societies. Those with chapters at Stony Brook include *Alpha Eta* (Allied Health Professions), *Sigma Gamma Epsilon* (Earth Science), *Omicron Delta Epsilon* (Economics), *Eta Kappa Nu* (Electrical Engineering), *Delta Phi Alpha* (German), *Phi Alpha Theta* (History), *Phi Sigma Tau* (Philosophy), *Sigma Pi Sigma* (Physics), *Pi Sigma Alpha* (Political Science), *Phi Sigma Iota* (Romance Languages), *Dobro Slovo* (Slavic Languages), and *Alpha Kappa Delta* (Sociology).

Dean's List

At the end of each semester the dean of each academic unit compiles a Dean's List of undergraduate students

who constitute approximately the top 20 percent of their class, provided they meet certain criteria. Each full-time student must have completed that semester at least 12 credits for letter grade (including S) and have no I's, U's, NR's, NC's, or F's. P grades are not counted as letter grades for this purpose. The grade point average cutoffs for the College of Arts and Sciences are: seniors, 3.50; juniors, 3.35; sophomores, 3.20; and freshmen, 3.10. For the College of Engineering and Applied Sciences the cutoffs are: seniors, 3.40; juniors, 3.35; sophomores, 3.30; and freshmen, 3.30. The cutoffs are recalculated every two years to reflect changes in grading patterns. Each part-time student must have earned a grade point average of 3.50 or above for at least six credits in a semester of letter-graded work (not including S or P grades) with no I's, U's, NR's, NC's, or F's.

Degrees with Distinction

Degrees with distinction are conferred on candidates for Bachelor of Arts, Bachelor of Science, or Bachelor of Engineering who have completed at least 60 credits at Stony Brook (excluding Challenge credit), have letter grades assigned to at least 80 percent of their coursework, and attain the requisite grade point average. The levels of distinction include summa cum laude, magna cum laude, and cum laude and constitute approximately the 98th percentile, the 93rd percentile, and the 85th percentile, respectively. Attainment of a degree with distinction is indicted on the student's diploma and permanent academic record. The grade point average cutoffs for the three levels of distinction are: summa cum laude, 3.85; magna cum laude, 3.70; cum laude, 3.50. The cutoffs are reviewed at two-year intervals to reflect changes in grading patterns.

Departmental Honors Programs

While selection of students for all the above awards and honors is based primarily on University records and recommendation and not on application, students must declare their intention to seek departmental honors and must carry out prescribed academic activities to earn this distinction. The honors programs of those departments offering

them are described in the alphabetical listing of the College of Arts and Sciences. For those students who qualify, this fact is indicated on their diploma and on their permanent academic record.

Application for Graduation

In order to become a candidate for graduation, a student must file an "Application for Graduation" form with the Office of Records/Registrar. The deadline for such application is the end of the third week of the candidate's final semester. Students wishing to receive notice of unfulfilled degree requirements before the beginning of their final semester should file the application form by the end of the third week of the previous semester. (See Academic Calendar for deadline date.) Prospective August graduates must apply by the end of the second week of the last summer term for which they are registered. (See Academic Calendar.) No changes of grades can be made on a student's academic record after the degree has been awarded.

Withdrawal from the University

Official withdrawal will be recorded when a "Withdrawal from the University" form, available from the Office of Records/Registrar, has been submitted to the Registrar. The date on which the form is filed, not the date of last class attendance, is considered the official date of withdrawal. Non-attendance or notification to the student's instructors does not constitute formal withdrawal.

Students who submit withdrawal forms after the first ten class days but not later than the final day of classes in a semester will be assigned a withdrawal (W) for each course. Withdrawal after the last day of classes will not preclude academic dismissal.

Leave of Absence and Readmission

Students who indicate at the time of official withdrawal that they may wish to return to Stony Brook will be approved routinely for return to the University during the three semesters following withdrawal if: (1) withdrawal occurs prior to October 31 in the fall and March 15 in the spring semester; (2) the student has not withdrawn previously; (3) the

student has never been dismissed; and (4) the student has no disciplinary action pending. In addition, Advancement on Individual Merit (Educational Opportunity Program) students must obtain clearance for readmission from the A.I.M. Office, and foreign students must obtain a visa clearance from the Office of Foreign Student Affairs. The leave of absence may be cancelled for a student who attends another college while on leave from Stony Brook and who fails to maintain a C average in that institution. A student in that situation should contact an admissions counselor at the earliest opportunity.

A student who withdraws from the University after October 31 in the fall and after March 15 in the spring semester and who otherwise meets the above conditions will be approved routinely to return after one full semester has elapsed. Students with documented extenuating circumstances, e.g., health problems, may petition the Undergraduate Admissions Office to return in the subsequent semester. Those who have been dismissed from the University must allow at least one semester to elapse before applying for readmission and must have had the period of dismissal terminated by the appropriate University official or committee before a decision can be reached on the application for readmission.

Students who withdraw under circumstances different from those described above will be advised of their status by the Undergraduate Admissions Office and provided with instructions for seeking readmission.

An applicant who is denied readmission may appeal to the Admissions Committee. An applicant whose account with the Business Office is delinquent may be readmitted but will not be authorized to register until the account has been cleared.

Equivalent Opportunity/Religious Absences

Some students may be unable to attend classes on certain days because of religious beliefs. Section 224-a of the Education Law provides that:

1. No person shall be expelled from or be refused admission as a student to

- an institution of higher education for the reason that he [or she] is unable, because of religious beliefs, to attend classes or to participate in any examination, study, or work requirements on a particular day or days.
2. Any student in an institution of higher education who is unable, because of his [or her] religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from performing on the particular day or days any examination or any study or work requirements.*
 3. It shall be the responsibility of the faculty and of the administrative officials of each institution of higher education to make available to each student who is absent from school, because of religious beliefs, an equivalent opportunity to make up any examination, study, or work requirements which he [or she] may have missed because of such absence on any particular day or days. No fees of any kind shall be charged by the institution for making available to the said student such equivalent opportunity.
 4. If classes, examinations, study, or work requirements are held on Friday after four o'clock post-meridian or on Saturday, similar or makeup classes, examinations, study, or work requirements shall be made available on other days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study, or work requirements held on other days.
 5. In effectuating the provisions of this section, it shall be the duty of the faculty and of the administrative officials of each institution of higher education to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any students because of their availing themselves of the provisions of this section.

*Students shall be excused from the examination or study or work requirement only on the particular day or days they are unable to attend classes because of religious beliefs. See provision #3.

6. Any student who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section shall be entitled to maintain an action or proceeding in the supreme court of the county in which such institution of higher education is located for the enforcement of his [or her] rights under this section.
7. As used in this section, the term "institution of higher education" shall mean schools under the control of the Board of Trustees of the State University of New York or of the Board of Higher Education of the City of New York or any community college.

Research Involving Human Subjects

All experiments conducted by Stony Brook personnel in which human subjects are involved are required to be reviewed and approved by the campus Committee on Research Involving Human Subjects. Since undergraduates are often asked to act as subjects, they should be aware that it is the right of any subject to know if such an experiment has received such approval and that State University policy forbids individual campuses to require the participation of students as subjects in human research. In almost every instance an informed consent form is required of the subject. This form serves to outline the risks, if any, to the subject and describes the subject's participation. Inquiries about such experiments should be directed to the Executive Secretary of the Committee on Research Involving Human Subjects (246-7935).

Student Educational Records

The Family Educational Rights and Privacy Act permits current or former students to inspect and review their educational records. Students are also accorded the right to a hearing in order to question the contents of their educational records. Written consent of students may be required before personally identifiable information about them will be released from their educational records as provided by law.

Specific guidelines and procedures are contained in PR-106, "Compliance with Family Rights and Privacy Act,"

contained in the Administrative Organization, Policies, and Procedures Manual of the University. A copy of this manual is available in the Reference Room of the Melville Library.

After administrative remedies available at the University have been exhausted, inquiries or complaints may be filed with the Family Education Rights and Privacy Act Office, Department of Education, Room 4511, Switzer Building, Washington, DC 20202.

Change of Address

To ensure prompt receipt of registration materials, grade reports, and other important University communications, students should promptly report off-campus mailing address changes to the Office of Records/Registrar. A form is available from the Office for this purpose. On-campus housing address changes should be reported to the appropriate Residence Life Quad Office rather than to the Registrar.

Campus Telephone Directory

It is the policy of the State University of New York at Stony Brook to publish a Campus Telephone Directory including student name, home address, telephone number, major, and level. If a student does not wish to be listed in the Directory, or in the case of a minor student, if a parent does not wish such listing, he or she will be required to so indicate at the time of registration by filing SUSB Form 503-B.

Changes in Regulations and Course Offerings

The courses of study, academic regulations, semester listings, and other information contained in this *Bulletin* are subject to the restrictions of the timetable and date of publication of the *Bulletin*. The University, therefore, reserves the right to change academic regulations or to cancel any course for whatever reason it may deem appropriate. New courses, revised courses and requirements, new and revised majors and minors, and changes in academic regulations are reported in the Undergraduate Bulletin Supplement, issued at each Advance Registration period.



College of Arts and Sciences

Degree Requirements

All candidates for the Bachelor of Arts or Bachelor of Science degree must satisfy all University graduation requirements, College proficiency and distribution requirements, and the requirements of a declared major.

University Graduation Requirements

Credit Hour Requirement

At least 120 credit hours of passing work must have been completed for the Bachelor of Arts and Bachelor of Science degrees except in certain areas of study where additional credits may be required.

Notes: Restrictions on the number of credits that may be earned in independent study, activity-related courses, courses for undergraduate teaching assistants, C.E.D. courses, certain ESL courses, studio and performance courses, and repeated courses are stated in "Course Credits and Prerequisites," p. 55.

At least 80 percent of all credits taken at Stony Brook, including F, U, and NC courses (but excluding courses in which a W is received) must be taken for a letter grade. (See also "Satisfactory/Unsatisfactory Grading," p. 41.)

Grade Point Average Requirement

A cumulative grade point average of at least 2.00 is required for all academic work taken at Stony Brook.

Residence Requirement

Beginning with the 58th credit, at least 36 credits must be earned at Stony Brook.

Upper-Division Credit Requirement

Each candidate must earn at least 39 credits in upper-division courses (numbered 300 and higher).

Note: Some of these credits may be earned through courses transferred from

other colleges and individually evaluated at Stony Brook as upper division. See p. 19, "Transfer Credit Policy."

Writing Requirement

This requirement assumes that instruction in writing is a central part of a university education. Therefore, all students will take at least one university course in writing—even if they already have strong high school skills and even if they write copiously in other university courses.

All students must take a diagnostic placement examination on entry and begin their writing requirement during their first two semesters at Stony Brook. Students who receive a grade of C- or lower in EGC 101 must repeat that course in the following semester. Students who are assigned to preparatory courses must take those courses in sequence in successive semesters until they have satisfied the writing requirement.

Placement will be indicated on the student's record in the following way:

Placement 1 refers to students who score "Weak" and are required to pass an ESL course, followed by EGC 100, and then to pass EGC 101 with a grade of C or higher.

Placement 2 refers to students who score "Weak" and are required to pass EGC 100 and then to pass EGC 101 with a grade of C or higher.

Placement 3 refers to students who score "Satisfactory" as to their preparation for college composition study and are required to pass EGC 101 with a grade of C or higher.

Placement 4 refers to students who score "Strong" and are required to pass any designated advanced writing course.

FRESHMEN

Freshmen who score "Strong" on the placement examination may choose

among the designated advanced writing courses*. If they score "Satisfactory," they will be placed in EGC 101. If they score "Weak," they will be placed in EGC 100 or an ESL course. Students scored "Weak" may not take EGC 101 until they do satisfactory work in the preparatory course.

To satisfy the University Writing Requirement, all freshmen must take EGC 101 for a letter grade and earn a grade of "C" or higher, or pass one of the designated advanced writing courses. Those freshmen whose writing skills are weak will have to take more than one writing course, since they must take at least one preparatory course before EGC 101.

TRANSFERS

Transfer students who score "Strong" on the placement examination and have already taken a course judged equivalent to Stony Brook's EGC 101 or one of the designated advanced writing courses will have satisfied this requirement. If they score "Strong" but do not bring credit for an equivalent of EGC 101 or one of the designated advanced writing courses listed below, they may choose among the designated advanced writing courses and pass one to satisfy this requirement. If they score "Satisfactory," they will be placed in EGC 101, which must be taken for a letter grade and passed with a grade of C or higher. Those transfer students who score "Weak" on the placement examination must take EGC 100 or an ESL course and go on to EGC 101, which must be taken for a letter grade and passed with a grade of C or higher to satisfy this requirement.

Designated Advanced Writing Courses

Designated advanced writing courses may be offered by any academic department. The guidelines under which such courses are approved include the following:

- the course should have a maximum of 30 students per section;
- some writing should be handed in each week;
- the course need not focus on the teaching of writing but considerable attention should be paid to it;
- grades should take writing ability into account.

Designated advanced writing courses are: EGC 102, EGL 191, 192, 193, 199, 202, 204; HIS 214; JDH/RLS 230; PHI 100, 103, 104, 105, 108; RLS 150.

As courses are added to this list, they will be noted in the *Undergraduate Bulletin Supplement*.

College Proficiency Requirements

Proficiency in Mathematics

Students may satisfy the mathematics proficiency requirement in any one of the following ways:

1. By having passed while in high school the New York State Regents examination in Mathematics 11 with a score of at least 75.
2. By having passed the College Entrance Examination Board Achievement Test in Mathematics, Level I or Level II, with a score of at least 550.
3. By passing a special examination at the MAP 102 level. This examination is administered several times during each academic year by the Department of Mathematics.
4. By enrolling in and passing MAP 102 or MAP 106, or obtaining transfer credit for MAP 102 by presenting a grade of C or higher in a comparable course taken elsewhere.
5. By enrolling in and passing a mathematics course at the level of MAT 120 or higher, or obtaining transfer credit for such a course by presenting a grade of C or higher in a comparable course taken elsewhere, or obtaining Challenge or Advanced Placement credit in calculus.

Students, including transfer students, who are unable to satisfy the mathematics proficiency requirement before or during the first year at Stony Brook must enroll in an appropriate course (MAP 101 or a course that will satisfy proficiency) in the first semester of the second year at Stony Brook, and must satisfy the proficiency requirement before graduation.

Proficiency in a Foreign Language

The language requirement is set at one year of introductory college work in a foreign language. It may be satisfied in any one of the following ways:

1. By having passed while in high school the New York State Regents examination in a foreign language with a grade of 75 or higher. In the

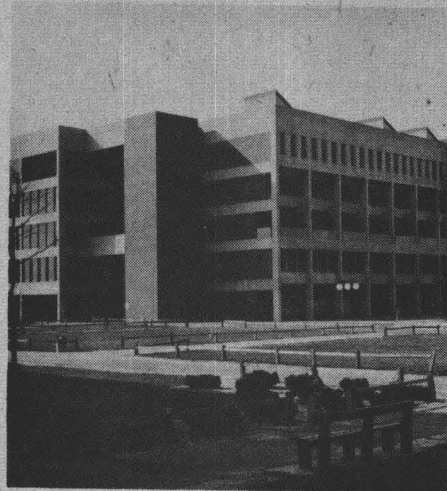
absence of a Regents score, a score of 75 or higher on the third-level high school language New York City Competency Test will satisfy the foreign language proficiency requirement.

2. By having passed the College Entrance Examination Board Achievement Test in a foreign language with a grade of 525 or higher.
3. By passing a Stony Brook proficiency examination in a foreign language.
Note: Students who wish to fulfill the foreign language proficiency requirement by examination may do so by Challenge Examination for a language course numbered 112, 113, 191, or higher. When the Challenge Examination is used to fulfill the foreign language proficiency requirement, no credit will be awarded unless the student meets all rules and regulations outlined in the "Guidelines for the Stony Brook Challenge Program," which is available in academic departments and the Center for Academic Advising.
4. By enrolling in and passing with a grade of C or higher a foreign language course numbered 112, 113, 191, or higher. (Students who elect to use the P/NC grading option will not satisfy the requirement.)
5. By obtaining transfer credit in a foreign language course at the second semester introductory level with a grade of C or higher.

Note that literature and culture courses taught in English translation under the auspices of the foreign language departments do not satisfy the foreign language proficiency requirement.

American Sign Language, although not offered on this campus, may be used to satisfy this requirement by means of the regular transfer credit procedure.

Foreign students whose native language is not represented in the University's curriculum have fulfilled the foreign language proficiency requirement if their secondary school and previously attended university transcripts show a total of four years of formal study of their native language and literature.



College Distribution Requirements

Distribution requirements are normally met by attaining a passing grade in appropriate courses. Up to four credits required in each area, however, may be filled by AP, CPE, CLEP, or Challenge credit or other approved credit by examination. No more than eight credits with the same designator (three-letter prefix) may be used to fulfill distribution requirements.

The following categories of courses do not fulfill distribution requirements:

1. Proficiency-level courses: AIM, ESL, EGC, MAP.
2. Federated Learning Communities core courses, program seminars, and independent projects: ATS, EPP, EPS, FLC, LIS, NTR, SEI, WPT. Some other excluded designators in this category appeared in earlier editions of the *Undergraduate Bulletin* and others will be announced as new Federated Learning Communities are developed.
3. Certain interdisciplinary courses: INT.
4. Physical Education courses: PEC.
5. Elementary foreign language courses: Numbered 111 through 116.
6. Community service and day care courses: AFS, PSY, and SSI 283.

Arts and Humanities

Twelve (12) credits to be chosen from among the offerings in art (ARH and ARS), classics (CLS), comparative literature (CLT), English (EGL—but not EGC), foreign languages (CHI, EEL, FLA, FRN, GER, GRK, HBW, ITL, LAN, LAT, POR, PSH, RUS, SKT, SPN, SWE, YDH—but not courses numbered 111-116), humanities interdisciplinary (HUM), music (MUS), philosophy (PHI), religious studies (RLS), theatre arts (THR). Also, Incoming Student Seminars designated ISH, Africana studies courses designated AFH, Judaic studies courses designated JDH, and certain Health Sciences Center courses (HMC 200, 331).

Natural Sciences and Mathematics

Twelve (12) credits to be chosen from among the offerings in astronomy (AST), atmospheric sciences (ATM), biological sciences (BIO), chemistry (CHE), earth and space sciences (ESS), engineering and applied sciences (AMS, CSE, ESC, ESE, ESG, ESI, ESM, and EST 100, 194, and 320), geology (GEO), interdisciplinary natural sciences (SCI), marine sciences (MAR), mathematics (MAT, MAE—but not MAP), physics (PHY). Also, Incoming Student Seminars designated ISN.

Social and Behavioral Sciences

Twelve (12) credits to be chosen from among the offerings in anthropology (ANT), economics (ECO), history (HIS), interdisciplinary social sciences (SBS and SSI—but not 283), linguistics (LIN), political science (POL), psychology (PSY—but not 283), sociology (SOC). Also, Incoming Student Seminars designated ISS, Africana studies courses designated AFS (but not 283), and Judaic studies courses designated JDS.

Other Distribution Credits

Sometimes Independent Study Program and Foreign Study courses (ISP, FSC, FSD, FSF, FSG, FSI, FSJ) may satisfy distribution requirements. These must be evaluated for each student individually.

Degree Programs

Two different degree programs leading to the Bachelor of Arts or Bachelor of Science degree are open to students in the College of Arts and Sciences. (For information about degree programs in the College of Engineering and Applied Sciences, see that section of this *Bulletin*.) Before selecting a degree program students may consult an advisor in the Center for Academic Advising. The two choices of degree programs are:

The Departmental Major

This program consists of study concentrated in one of the academic departments of the College of Arts and Sciences and allows the student to explore in some depth the content, methods, and achievements of a given

academic discipline. Departmental requirements and course offerings are listed in detail, and in alphabetical order by department, in this chapter of the *Bulletin*. They should be carefully considered and discussed with a member of the department.

The Interdisciplinary or Interdepartmental Major

This choice of degree program allows the student to investigate an area of concern that transcends the limits of individual academic departments by combining appropriate courses from two or more disciplines to create an integrated core of study directed toward a special goal. Interdisciplinary programs are described in detail in this chapter of the *Bulletin* under individual headings—alphabetically arranged. For further information consult the Center for Academic Advising or the director of the program.

Special Programs

The Academic Minor

An academic minor is a specified sequence of courses totaling between 18 and 24 credits, including at least nine credits of upper-division work, that a student may choose to follow as a way of organizing electives. It does not lead to a degree. Participation in a minor is voluntary and includes not only completing the required sequence but also consulting the minor coordinator initially and as work in the minor proceeds. Although minors are administered by regular departments or interdisciplinary programs, some include subject matter that cuts across several departments, programs, and colleges. Minor requirements are described in detail in this chapter of the *Bulletin* in the alphabetical listing of departments and programs. In addition, the College of Engineering and Applied Sciences and the Health Sciences Center each offer a minor for Arts and Sciences students. See p. 226 and p. 232. For further information consult the minor coordinator or the Center for Academic Advising.

Independent Study

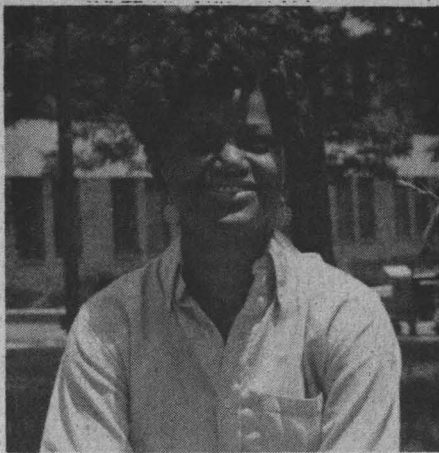
Within each of the two degree programs described above, a student may wish to undertake independent study. This may be done either through Directed Readings and Research under departmental auspices or through the

Independent Study Program. (See p. 55 for restrictions on total credit for independent study.)

Through procedures established by departments, a student may enroll for up to six credits of directed readings or research in a single department in a single semester. More than six credits are permissible if they are in more than one department.

Interdisciplinary projects and projects entailing more than six credits are carried out under the Independent Study Program. This program allows the student, in consultation with appropriate faculty members, to develop an individual course of academic investigation and study. The procedure for obtaining approval of an independent study project is as follows: The student prepares a brief written outline of the study project, indicating its scope and purpose and the methods that will be used to conduct it. The student must then obtain from two faculty members written approval of the project and agreement to supervise it and to recommend appropriate academic credit. The completed proposal—project outline and endorsement—is then submitted by the sponsoring faculty member to the appropriate college committee for review. Guidelines for preparing the proposal, which must be followed, are available in the Center for Academic Advising. The deadline for submitting proposals is announced early each semester for the following semester. Students whose proposals are approved register for either ISP 487, if their projects entail upper-division work for a letter grade, ISP 488 for upper-division work culminating in a Satisfactory/Unsatisfactory grade, or ISP 273 for lower-division work.

If the student wishes to use the ISP project as part of a departmental or interdisciplinary major, written approval must be secured through departmental channels. Independent study projects may be distributed throughout the undergraduate years, although in most cases students should complete the College proficiency requirements and three-quarters of the distribution requirements before proposing independent study. For further information consult the Center for Academic Advising.



Internships

Under the Internship Program in the College of Arts and Sciences, a student may spend a semester or summer working for academic credit under the supervision of both University faculty and professional staff at the cooperating agency or organization. Internships may be full- or part-time. Full-time internships require 30 or more hours on the job each week. Three to twelve credits may be earned for semester internships, three to six during the summer.

This program allows students to apply theory in practice; to test career intentions; to improve intellectual skills in writing, quantitative analysis, research, and administration; to increase their understanding of social, political, and economic forces; and to acquire work experience that may be useful for seeking employment or for applying to professional school.

The University maintains a registry of available internships that includes placement with government agencies, hospitals and clinics, businesses and industries, and legal and social agencies in New York City, Albany, Washington, D.C., on Long Island, and elsewhere. The cooperating agencies have agreed to give interns responsibilities that involve them in activities central to the agency's purposes. Routine office chores and clerical work are kept to a minimum.

To qualify, a student must have: (1) completed 69 or more credits, of which at least 12 credits must have been taken at Stony Brook; (2) a cumulative grade point average of 2.5 or higher; and (3) the skills and prerequisite

coursework required for the particular internship. Two letters of recommendation are required.

Interested students may obtain information and advice about the Internship Program in the Center for Academic Advising.

Teacher Preparation

The University offers programs to prepare students to become teachers in secondary schools. Students who complete Stony Brook's approved sequences are eligible for provisional teacher certification by New York State. They should plan to complete the requirements of either a departmental major or an interdisciplinary major and consult their major (or prospective major) department for assistance as early as the second semester of the freshman year. Teacher preparation programs are offered in the following secondary school subjects: biology, earth science, English, foreign languages (French, German, Italian, Russian, and Spanish), mathematics, physics, and social studies. The University also offers a teacher preparation program in Teaching English to Speakers of Other Languages (TESOL).

Certification is not automatic. Upon successful completion of the program, the student must apply for state certification by completing the necessary application forms available from the Teacher Certification Officer.

Freshman Seminars and Honors Courses

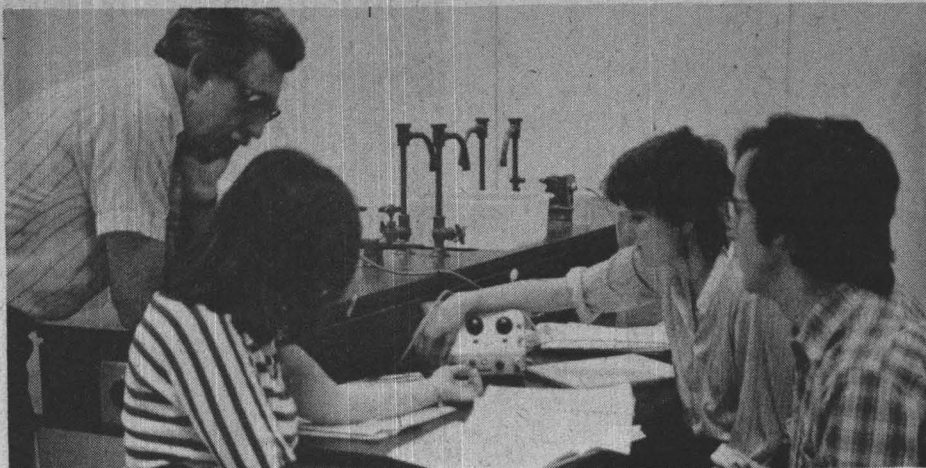
Several academic departments offer honors courses for freshmen who want a college experience that provides close intellectual interaction among the students and with the instructor. Descriptions of these courses appear among the sponsoring departments' 100-level courses in the alphabetical listing of departments and programs following this introduction to the College of Arts and Sciences. By choosing one of these courses, students contribute to the quality of their own academic experience and set challenging educational expectations for themselves that will affect future college work. Freshmen admitted to Stony Brook as University Scholars and as Scholar Incentives Program students receive preference in enrollment.

The Incoming Student Seminars are a special group of limited-enrollment courses offered from time to time to freshman students. They afford the new student an opportunity to be introduced to intellectual inquiry in a small group, to meet at least one faculty member on a personal basis, and to improve basic reading, discussion, and writing skills at the outset of their college careers. Descriptions of these seminars, which do not appear in the *Bulletin* are made available to freshmen for those semesters in which they will be offered.

Undergraduate Teaching Assistantships

In many departments upper-division students who have demonstrated mastery of the subject matter are selected to serve as undergraduate teaching assistants for credit. The undergraduate teaching assistant normally must have completed and excelled in the course being taught and is expected to know more throughout the semester than the students—not simply to know the same material better. Undergraduate teaching assistants enroll in the department's teaching practicum, numbered 475 or 476, designed to broaden their knowledge of the subject matter of the course and to instruct them in techniques of teaching and evaluation. They may not be given credit for independent reading or research for teaching assistance nor may they register in the course in which they are teaching. (Upon discovery of the awarding of such credit—at any time—it will be removed from the student's record.) Limits on credit earned by serving as an undergraduate teaching assistant are described in "Course Credits and Prerequisites," below.

Undergraduate teaching assistants may neither proctor nor prepare mid-term or final examinations, nor may they see the final version of any examination before it is given. They may not grade any written work, although they may be assigned to read and criticize such work. Exceptions to this rule may only be made by special permission of the Vice Provost for Undergraduate Studies. The assignment of grades remains the responsibility of the faculty member and cannot be



delegated to undergraduate teaching assistants. All teaching faculty with both graduate and undergraduate teaching assistants must inform the students in their classes of the status of each teaching assistant.

Course Credit and Prerequisites

1. *Repeatable Courses.* Only courses stating in the description (or in a note preceding a group of courses) that they may be repeated may be taken more than once for credit.
2. *Instructor's Prerogatives Regarding Prerequisites.* Certain courses may be taken only with the permission of the instructor or of the department; this is listed as a prerequisite for the course. For courses with specific course prerequisites, "or permission of instructor" is always understood. That is, students who think they have acquired the knowledge necessary for the course through means other than taking the listed prerequisites may ask the instructor's permission to take the course. Instructors have the option of deregistering students who have enrolled without proper prerequisites or permission.
3. *Undergraduate Teaching Practica.* Students may earn three credits in a department's course for undergraduate teaching assistants numbered 475. They may later enroll in a 476 course in the same department, if available, or in a second 475 course in a different department. No more than six credits

out of 120 may be earned through being an undergraduate teaching assistant. (See "Undergraduate Teaching Assistantships," above.)

4. *Limits on Independent Study.* A total of 30 credits of independent work, including all credits in departmental and Independent Study Program courses, may be offered toward the degree requirement of 120 credits. These include arts and sciences courses numbered 273, 444-449, and 481-489, similar courses in other units, and transferred independent study credit. During the academic year a student may earn up to six credits for independent work in a single department or up to 15 credits in the Independent Study Program in any given semester. During the summer a student may earn three credits in a single department in each term or eight credits in the Independent Study Program for the entire summer. (See "Independent Study," p. 53.)

In some cases students may receive upper-division transfer credit for independent study work completed for credit at another college. Such independent study work must be evaluated and formally approved by the chairperson or director of the appropriate Stony Brook department or program as meeting the particular criteria for comparable work under the equivalent independent study courses offered by that department or program.

5. *Permission to Take Graduate Courses.* Upper-division students with superior academic records may, with the permission of the Vice Provost for Research and Graduate Studies, take graduate courses (but not teaching practica, readings, research, or other independent study) for undergraduate credit. Permission should be sought through the instructor and the chairperson of the

department offering the course. Graduate courses taken while a student is an undergraduate remain part of the undergraduate record. The student cannot subsequently receive graduate credit for such courses, except in the case of approved five-year programs leading simultaneously to a baccalaureate and a master's degree. (See item 6 for C.E.D. courses.)

6. *Permission to Take C.E.D. Courses.* Upper-division students with superior academic records may enroll for undergraduate credit in designated courses offered by the Center for Continuing Education (C.E.D.) with the written permission of the director of the Undergraduate Evening Program, C.E.D. instructor, and the Dean of Continuing Education. C.E.D. courses taken while a student is an undergraduate remain part of the undergraduate record. The student cannot subsequently receive graduate credit for such courses. The list of C.E.D. courses available for undergraduate registration is published each semester in the *Undergraduate Bulletin Supplement*. C.E.D. courses other than those on the designated list may not be used to fulfill the credit hour requirement for graduation.
7. *Activity-Related Courses.* AFS, PSY, and SSI 283 and all 100-level physical education courses have been designated "activity-related" courses. Students are limited to a total of nine credits in activity-related courses out of the 120 credits required for graduation. Of these nine credits no more than four credits may be in 100-level physical education courses.
8. *Remedial/Developmental Courses.* The following courses are designated as remedial/developmental: ESL 186, ESL 187, ESL 188, ESL 189, MAP

101. Credits from these courses will count toward the minimum credit workload for each semester, but they may not count toward the 120 credits needed for graduation.

9. *Limits on Studio and Performance Courses.* The New York State Board of Regents requires that out of the 120 credits required for the baccalaureate degree at least 90 credits for the B.A. (and 60 for the B.S.) must be in liberal arts and sciences courses. Certain studio and performance courses are excluded from those 90 (or 60) credits as identified in the departmental listings of Art, Music, and Theatre Arts.

Fulfillment of Major Requirements

When major requirements are changed, continuing students in the College of Arts and Sciences have the option of fulfilling the new requirements or of fulfilling those specified in the *Undergraduate Bulletin* and *Undergraduate Bulletin Supplement* current at the time they completed 45 credits.

Transfer students who entered Stony Brook with 45 or more transfer credits have the option of fulfilling the new requirements or of fulfilling the requirements specified in the *Undergraduate Bulletin* and *Undergraduate Bulletin Supplement* in effect when they matriculated.

Where course offerings have changed so that the required courses that would apply to particular students are no longer in the curriculum, the department will designate comparable alternatives to enable such students to complete the major in a timely manner.

Undergraduate Numbering System

- 100-199 Introductory courses; appropriate for and generally taken by freshmen.
- 200-299 Intermediate courses; appropriate for and generally taken by sophomores.
- 300-399 Upper-division courses; appropriate for and generally taken by juniors and seniors.
- 400-499 Special upper-division courses such as seminars, directed readings and research, and teaching practica; appropriate for and generally taken by juniors and seniors. Certain 400-level courses for seniors only are so specified.

Courses with hyphenated numbers (e.g., HIS 495-496) are year-long courses. Students are obliged to complete both semesters in order to receive credit for the first semester.

Renumbered Courses

The notation "(Formerly ABC 000)" after the course number and title indicates that the course designator or number *only* has been changed and that the former course is the same as the present one. Therefore, a student who took the course under its former number or designator may use it to meet any College or major requirement for which the present course would apply.

Interdisciplinary Program in Africana Studies

Associate Professors

Amiri Baraka: Play Writing; Pan-Africanism; contemporary affairs; literature.

Leslie H. Owens, Director, Ph.D., University of California, Riverside: Afro-American social history; black family; civil rights movement; slavery.

Assistant Professors

Carolyn Anderson Brown, Ph.D., Columbia University: African politics; foreign affairs; Caribbean affairs.

Ernest F. Dube, Ph.D., Cornell University: Cognitive psychology; cross-cultural analysis.

William McAdoo, Ph.D., University of Michigan: United States urban, social and institutional history; Afro-American history.

Teaching Assistants

Estimated number: 2

The Africana studies program is interdisciplinary in scope and addresses itself to the experiences of persons of African descent throughout the world. It is designed to explore African civilizations and their influences on other parts of the "Black Diaspora." Issues within the black international communities in Africa, the United States, and elsewhere will be examined from both historical and contemporary perspectives. Particular attention will be focused on political concepts, cultural development, legal relations, and social theories.

Requirements for the Major in Africana Studies

The major in Africana studies leads to the Bachelor of Arts degree. All courses for the major must be taken for a letter grade.

	Credits
1. AFS 101, 102 Themes in the Black Experience	6
2. AFH 206 Great Books of the Black Experience or AFH 249 African-American Literature and Music in the 19th and 20th Centuries	3
3. AFS 283 Community Service	3
4. Two courses at the 200 level (from AFS 200, 225, 239, 240, 251, or 275). These are to be selected in consultation with a program advisor	6
5. Four upper-division courses other than AFH or AFS 447 and 487	12
6. AFH or AFS 447 Directed Readings or AFH or AFS 487 Directed Research to be taken in the junior or senior year	3
7. Nine credits in a related discipline	9
Total	42

Requirements for the Minor in Africana Studies

The minor in Africana studies is intended to reach students interested in exploring aspects of the Black Experience in ways that relate to their own major field of study. It involves a regular sequence of lower- and upper-division courses to give the student a well-balanced analysis of the varied aspects of the black past. All courses for the minor must be taken for a letter grade.

	Credits
1. AFS 101, 102 Themes in the Black Experience	6
2. One course selected from AFS 225, 239 or 275	3
3. One course, numbered 200 or higher, selected in consultation with the minor coordinator	3
4. Three courses selected from upper-division courses other than AFH or AFS 447 and 487	9
5. Either AFH or AFS 447 Directed Readings or AFH or AFS 487 Directed Research to be taken in the junior or senior year	3
Total	24

Notes Pertaining to the Major and to AFS Courses

No more than 12 of the 33 Africana studies credits may be taken at another institution (exceptions made in the case of planned foreign study). Appropriate choices to satisfy the College distribution requirement in the arts and humanities are indicated by the designator AFH. Appropriate choices to satisfy the College distribution requirement in the social and behavioral sciences are indicated by the designator AFS (except AFS 283).

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

AFS 101, 102 Themes in the Black Experience I, II

A historical survey of the experience of people of African descent. This course will examine the similarities and differences among the lifestyles of black people in Africa, the Caribbean, and America, with particular emphasis on the United States. The first semester will treat themes to 1865. The second semester will treat themes from 1865 to the present.

Fall (101) and Spring (102), 3 credits each semester

AFS 200 American Attitudes Toward Race

A historical examination of the growth and development of racism in America. The focus will be on black Americans and their relationships with the American system, its institutions, and culture. References will be made to other ethnic groups in order to give balance to social conditions and attitudes shaping American society.

Fall or Spring, 3 credits

AFH 206 Great Books of the Black Experience

An exploration of some of the key writings—from autobiographies to novels, etc.—important to becoming familiar with central lines of thought and interpretation in the larger Black Experience. Focus and readings will vary depending on each semester's emphasis.

Prerequisite: Sophomore standing

Fall, alternate years, 3 credits (not offered in 1986-87)

AFS 225 The African Revolution

An exploration of those events which have been the basis of change in Africa, drawing from social, historical, and political

perspectives; the role of Africa in world affairs; and the events that have shaped the internal African national movements and liberation struggles, both past and present.
Fall, 3 credits

AFS 239 Introduction to the Caribbean Experience

An introduction to the political economy of contemporary Caribbean societies with emphasis on the historical roots of their present underdevelopment.
Fall, 3 credits

AFS 240 Issues in Caribbean Society

An analysis of the process of social change in the English, Spanish, and French Caribbean with special emphasis on those societies undergoing rapid transformation.
Prerequisites: AFS 101, 102
Spring, 3 credits

AFH 249 African-American Literature and Music in the 19th and 20th Centuries

A general and detailed look at black literature and music and its importance for literature and music generally in the 19th and 20th centuries. Topics will include: Country Blues, City Blues, New Orleans music, Rag and Boogie Woogie, Big Band, Be-Bop, and the new music of the 1960s and beyond; Frederick Douglass, folk literature, the Slave Narratives, Langston Hughes, and James Baldwin.
Spring, 3 credits

AFS 251 Education of the Afro-American in America

An analysis of significant research and publications on the education of the Afro-American in America. Emphasis will be placed on social, economic, political, and psychological factors that have conditioned educational opportunities for Afro-American citizens. Components of the present social crisis in America will be examined.
Prerequisite: Permission of instructor
Fall, 3 credits

AFS 275 Black Women and Social Change: A Cross-Cultural Perspective

A cross-cultural survey of the history of black women in the context of the struggles for social justice in the Caribbean (English- and Spanish-speaking), Africa, and the United States. Several major topics will be covered: the slave resistance and the anti-slavery movement; the anti-colonial struggle in Africa and the Caribbean; the trade union movement in the United States and Africa; the struggle against underdevelopment in Cuba, Puerto Rico, and Jamaica; and the anti-apartheid movement in South Africa.
Spring, 3 credits

AFS 283 Community Service

Through field experience, readings, research, and discussion, students will focus on a social and educational problem relating primarily to the Black Experience. Specific programs may include tutoring in a prison setting, working with children from low-income families, and other projects to be announced. May not be counted toward the distribution requirement in behavioral sciences. Satisfactory/Unsatisfactory grading only.
Fall or Spring, 3 credits

AFS 300 Blacks in the City

An examination of the urban experience of black Americans, with attention paid to the development of inner cities and the social policy that has helped to shape the urban consciousness of blacks in the 20th century.
Fall, 3 credits

AFS 319 The Politics of Race

An analysis of political concepts often associated with racism and the tracing of the origins of the concept of race. Three forms in which racism manifests itself today will be identified and discussed: overt, covert, and reactive racism. Examples of these three forms and the groups involved with them will be identified and discussed, showing the similarities and differences where they exist.
Prerequisites: Three courses in the social sciences
Fall, 3 credits

AFS 325 The Civil Rights Movement

A detailed study of the movement for civil rights from its origins, examining the establishment of the NAACP, race relations between whites and blacks since 1900, the role of the Supreme Court and the federal government, and the turn to militancy in the 1950s and after. Crosslisted with HIS 325.
Fall, 3 credits

AFH 329, 330 Pan-African Literature I, II

An examination of the cultural themes of Pan-Africanism and hegitude, drawing on a selection of writers from the United States, Africa, and the Caribbean. The course will treat the development, diffusion, and significance of these themes. It will involve intensive consideration of selected literary works of African and Afro-American expression.
Prerequisites: Two courses in literature
Fall (329) and Spring (330), alternate years, 3 credits each semester (not offered in 1985-86)

AFS 335 Contemporary African Problems

An investigation of the nature of African societies by studying the variety of African political, social, and traditional forms necessary to understanding developments in the 19th and 20th centuries. Emphasis will be on some of the long-standing problems

essential to understanding the diversity of ideas and people in the African scene.
Crosslisted with POL 335.

Prerequisites: Two AFS or POL courses
Fall, 3 credits

AFS 337 The Politics of Africa

A study of nationalism, political thought, and political institutions in Africa. Consideration is given to the quest for unity, the problems of liberation, and the political implications of social change. Crosslisted with POL 337.
Prerequisites: Two AFS or POL courses
Spring, 3 credits

AFS 360 Black Social Commentary

A study of black responses to the social order in America. The course will concentrate on the various ways black people have conceptualized and described their condition. Particular attention will be paid to the solutions proposed by black spokespersons during various historical eras.
Prerequisites: Three courses in the social sciences
Fall, 3 credits

AFS 370 The Black Family

The black family in historical perspective. The nature and structure of that family, the obstacles that it has faced, and its interrelationships with the black community.
Spring, alternate years, 3 credits (not offered in 1986-87)

AFS 372 Contemporary Political Thought and the Black Community

A critical analysis of the major architects of black political consciousness and their movements in the context of their distinctive historical development. Emphasis will be on the intellectual and ideological ferment of the 1920s (DuBois, Randolph, Garvey, *et al.*) and the 1960s (King, Muhammad, Malcolm, Karenga, Jones, Fanon, Black Panther Party, etc.).
Prerequisite: Permission of instructor
Spring, 3 credits

AFS 375 Slavery

The historical experience of blacks in slavery with emphasis on the American South and with comparative references to slave systems as they developed in the Western Hemisphere.
Spring, 3 credits

AFH, AFS 420 Topics in Africana Studies

An examination of a selected topic in the Black Experience to be announced each term. The designator AFH will be assigned to topics in the humanities area; AFS will be assigned to topics in the social sciences area. May be repeated for different topics.
Schedule to be announced, 3 credits

AFH, AFS 447 Readings in Africana Studies

Individually supervised reading in selected topics in the Black Experience. The designator AFH will be assigned to topics in the humanities area; AFS will be assigned to topics in the social sciences area. May be repeated once.

Prerequisite: Permission of program
Fall and spring, 1 to 3 credits

AFS 463, 464 The Media and Black America I, II

A historical examination in a seminar format of the major media characterizations of black Americans and the Black Experience, and the impact of these portrayals on American society at large. The roles of newspapers, books, magazines, plays, radio, movies,

television, and advertisements will be studied. Students will have the opportunity to develop hands-on experience and technical skills in video filming and production. AFS 463 covers the period from the pre-Civil War era to 1920; AFS 464, from 1920 to the present.
Prerequisites to AFS 463: Two AFS courses; permission of instructor
Prerequisites to AFS 464: AFS 463; permission of instructor
Fall (463) and spring (464), 4 credits each semester

AFH, AFS 487 Research in Africana Studies

Individual research projects in the Black Experience carried out under the direct supervision of a faculty member. The designator AFH will be assigned to projects in the humanities area; AFS will be assigned to projects in the social sciences area. May be repeated once, but only three credits will count toward fulfillment of major requirements.

Prerequisite: Permission of program
Fall and spring, 1 to 3 credits

AFS 490 Legal Process and Social Structure

A critical evaluation of the administration of justice, legal institutions, and legal process in relation to prevailing social structure.

Prerequisite: Permission of instructor
Spring, 3 credits

Department of Anthropology

Professors

Pedro Carrasco, Ph.D., Columbia University: Mesoamerica; social anthropology; culture history.

Louis C. Faron, Ph.D., Columbia University: South America; social anthropology.

Paula Brown Glick, Ph.D., University of London: Oceania; social anthropology.

David Hicks, Ph.D., University of London; D. Phil., Oxford University: Indonesia; social anthropology.

Phil C. Weigand, Chairperson, Ph.D., University of Southern Illinois: Mesoamerica; archaeology; culture history.

Associate Professors

W. Arens, Ph.D., University of Virginia: Africa; social anthropology.

Nancy Bonvillian, Ph.D., Columbia University: Native Americans; linguistics; social anthropology.

David Gilmore, Ph.D., University of Pennsylvania: Mediterranean area; social anthropology.

Theodore R. Kennedy, Ph.D., Princeton University: North America; Caribbean area; social anthropology.

June Starr, Ph.D., University of California, Berkeley: Middle East; social anthropology.

Robert F. Stevenson, Ph.D., Columbia University: Africa; social anthropology; culture history.

Margaret C. Wheeler, Ph.D., Yale University: North America; physical and social anthropology.

Assistant Professors

Frederick Grine, Ph.D., University of Witwatersrand: Physical anthropology.

Kent G. Lightfoot, Ph.D., Arizona State University: American Southwest; archaeology.

Dolores Newton, Ph.D., Harvard University: South America; material culture.

Elizabeth C. Stone, Director of Undergraduate Studies, Ph.D., University of Chicago: Near East; Old World archaeology.

Teaching Assistants

Estimated number: 5

The undergraduate program introduces the student to the general field of anthropology, its branches, its theories and methods, and its relation to the other social sciences and the humanities. The curriculum emphasizes the fields of cultural and social

anthropology and archaeology and includes offerings in ecological, medical, and physical anthropology, linguistics, and museology.

Requirements for the Major in Anthropology

The major in anthropology leads to the Bachelor of Arts degree. Students must take at least one course in each of the four fields of anthropology: social and cultural anthropology, archaeology, physical anthropology, and linguistics. All required courses must be taken for a letter grade. The program consists of:

	<i>Credits</i>
A. Study within the Area of the Major	
1. ANT 102 Introduction to Cultural Anthropology or ANT 103 Honors Introduction to Cultural Anthropology	3
2. ANT 104 Introduction to Archaeology	3
3. ANT 120 Introduction to Physical Anthropology	3
4. Three ethnographic area courses; of which at least one must be upper division, to be selected from the following: ANT 203, 209, 219, 230, 301, 304, 307, 312, 316, 317, 318, 359, 360, 392	9
5. ANT 300 Approaches to Anthropological Theory	3

6. ANT 363, Language and Culture	3
7. Three topical courses, of which at least one must be upper division, to be selected from the following: ANT 220, 251, 252, 255, 260, 265, 280, 320, 330, 350, 352, 353, 354, 355, 356, 357, 358, 361, 366, 367, 371, 372, 391	9
8. At least one 400-level course to be chosen from: ANT 401, 402, 403, 410, 421, 492. (Note: ANT 447 and 487 may not be used to fulfill this requirement.)	3
Subtotal	36

B. Related Courses	
Two courses (6-8 credits) at the upper-division level selected with departmental approval from the following departments: Africana Studies, Art (History/Criticism), Biological Sciences, Economics, History, Linguistics, Political Science, Psychology, Social Sciences, and Sociology. Students should consult departmental advisors about their course of study.	
6-8	
Total	42-44

Honors Program in Anthropology

The honors program is designed for students preparing to enter a graduate program in anthropology. Majors with an excellent academic record and a grade point average of 3.5 or higher in anthropology courses may enter the honors program. Students wishing to qualify for honors must declare so by the beginning of their senior year. During the senior year the student will prepare the honors thesis based on independent research. Course credit for the honors thesis is usually in ANT 447, but in some instances another 400-level or graduate course may be appropriate. The honor's thesis will be evaluated by two members of the Anthropology faculty and one from outside the department. Students recommended for graduation with honors must be approved by the faculty of the

department. The program consists of:

	<i>Credits</i>
1. Completion of all requirements for the major in anthropology	42-44
2. Two special seminars: 400-level or graduate courses	6
3. ANT 447 or other thesis course	3
4. The honors thesis	—
Total	51-53

Requirements for the Minor in Anthropology

The minor in anthropology is designed for students majoring in other fields who wish to take anthropology courses relevant to their interests. Twenty-one credits in anthropology (nine of which must be upper division) will constitute a minor in anthropology. The program consists of:

	<i>Credits</i>
1. ANT 102 or 103	3
2. ANT 104 or 120	3
3. ANT 300	3
4. At least 12 additional credits in other anthropology courses (six of which must be upper division)	12
Total	21

Students interested in an anthropology minor should consult with departmental advisors to plan an appropriate sequence for their particular needs.

All courses must be taken for a letter grade.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

ANT 102 Introduction to Cultural Anthropology

Introduction to the institutions and beliefs of various cultures through an examination of forms of kinship, marriage, family, age-group, voluntary associations, and various levels of political, judicial, religious, and economic organization.

Fall and spring, 3 credits

ANT 103 Honors Introduction to Cultural Anthropology

An enriched introduction to the institutions and beliefs of various cultures through an examination of forms of kinship, marriage, family, age-group, voluntary associations, and various levels of political, judicial, religious, and economic organization. This course will require more reading and will present a more sophisticated view than ANT 102. May not be taken for credit in addition to ANT 102.

Prerequisites: Permission of department; priority given to Scholar Incentives students
Fall or spring, 3 credits

ANT 104 Introduction to Archaeology

An overview of archaeology as a field of study and an introduction to the methods, goals, and theoretical concepts used by archaeologists. The course outlines how archaeologists make behavioral interpretations using the cultural material of past human societies. Examples of survey, excavation, and analytical techniques will be presented as part of the class.

Fall and spring, 3 credits

ANT 105 Laboratory in Introductory Archaeology

A supervised laboratory in which students will have an opportunity to study artifact collections and to learn analytic techniques. Students will analyze collections of stone tools, pottery, and other artifacts.

Pre- or corequisite: ANT 104
Fall or spring, 1 credit

ANT 120 Introduction to Physical Anthropology

A consideration of human biological and cultural heritage through the study of: (1) physical characteristics and behavior of selected living primates; (2) comparative anatomy of selected higher primates; and (3) current research on human origins, evolution, and selected fossil primates.

Fall and spring, 3 credits

ANT 121 Laboratory in Introductory Physical Anthropology

A supervised laboratory in physical anthropology. Activities include comparative anatomy of the higher primates, measurements in physical anthropology, and opportunity to study casts of fossil materials.

Pre- or corequisite: ANT 120
Fall and spring, 1 credit

ANT 203 Native Peoples of North America

The various peoples and cultures of North America will be studied with respect to their political, educational, linguistic, social, and cultural patterns. Selected societies will be studied in depth.

Prerequisite: ANT 102 or 103
Alternate years, 3 credits (not offered in 1986-87)

ANT 209 Ancient Civilizations of Mexico and Peru

Ecological adaptation, economic systems, social and political institutions, religion, and intellectual achievements of the Aztecs, Incas, and other peoples of ancient Mexico and Peru.

Prerequisite: ANT 102 or 103

Fall, 3 credits

ANT 219 Peoples of the Caribbean

The study of the environment, history, and cultural and social institutions characteristic of the Caribbean area. Topics covered will include precontact cultures, colonialism and the institution of slavery, contemporary economic and political organization, community structure, cults, kinship, marriage and family patterns, gender differences, division of labor, and pluralism and ethnic diversity.

Prerequisite: ANT 102 or 103

Spring, 3 credits

ANT 220 Human Evolution and Adaptation

The evolution of the human species from earliest origins. The development, both biological and cultural, of human beings and their interaction and adaptation to physical and social environments.

Prerequisite: ANT 102 or 103 or 120

Fall, 3 credits

ANT 230 Peoples of the World

Adaptations and cultural development of peoples in different parts of the world, focusing on subsistence activities and their relationship to the development of distinctive social and political forms. Recent changes brought about by intercultural contact will also be discussed. Readings will be on selected peoples throughout the world.

Prerequisite: ANT 102 or 103

Fall, 3 credits

ANT 251 Comparative Religion

A survey of religious behavior in cross-cultural perspective. The approach is broadly comparative and eminently anthropological, involving theories of origin and evolution of religious systems, as well as the functioning of religious behavior and institutions within the total culture. Case study material is drawn primarily from preliterate societies, but some reference is made to the large organized religious systems of complex stratified societies.

Prerequisite: ANT 102 or 103

Fall, 3 credits

ANT 255 Technology, Art, and Material Culture

An introduction to various approaches to the study of material culture in its technological and artistic aspects, using ethnographic and archaeological studies from many different cultures. Emphasis will be on viewing artifacts and their associated technologies within the context of a total culture, and in

particular on seeing the relationship between material and nonmaterial forms of culture.

Prerequisite: ANT 102 or 103

Spring, 3 credits

ANT 260 Witchcraft and Magic

An exploration of the variety of witchcraft and magic beliefs and practices through examples from many periods and cultural areas. The course will consider psychological, social, and political interpretations of witchcraft and sorcery beliefs, including the study of accusations, confessions, mass hysteria, divination, trance, possession, fantasies, the social roles of the victim and accused, and magical techniques and practices.

Prerequisite: ANT 102 or 103

Fall, 3 credits

ANT 265 Anthropology and Literature

A study of how Western novelists have portrayed exotic peoples and cultures compared with novels by trained anthropologists and non-Western writers. Some comparative folklore will also be considered. Emphasis will be on the diversity of perception and experience, the relativity of cultural and moral frameworks, and the role of culture in shaping both life and art.

Prerequisite: ANT 102 or 103

Fall, 3 credits

ANT 280 Culture and Ecology

Examination of human adaptations to the wide range of world environments, such as food-gathering, fishing, hunting, farming, and pastoralism. Intensive case studies concerning the selection, use, and allocation of resources by human communities will be presented. Consideration will be given to a variety of theoretical approaches that have focused on the interaction between environment and cultural behavior.

Prerequisite: ANT 102 or 103

Spring, 3 credits

ANT 300 Approaches to Anthropological Theory (formerly ANT 395)

Designed for majors, this course is a systematic and comparative treatment of the various theoretical approaches in social and cultural anthropology, including functionalism, structuralism, evolutionism, cultural ecology, etc. The various theories are applied to specific ethnographic data. Current theoretical issues in the field will be discussed.

Prerequisites: ANT 102 or 103; two other anthropology courses

Fall or spring, 3 credits

ANT 301 Peoples of South America

A detailed coverage of problems of cultural and social evolution in South America during pre-Spanish times, continuing the descriptive analysis into the colonial and contemporary periods wherever possible. Consideration is given to problems of cultural and social stability and change in the areas of kinship and marriage, politics, economics, religion, and law.

Prerequisites: ANT 102 or 103; one other anthropology course

Fall or spring, 3 credits

ANT 304 Peoples of Africa

A survey of the range and distribution of African populations, languages, and sociocultural systems in full historical perspective and environmental context. Special attention is paid to the implications of anthropological theory. The general survey is supplemented by intensive analysis of select sociocultural systems. The course concludes with an assessment of the problems of emerging African nation-states and of current research problems and goals in Africa.

Prerequisites: ANT 102 or 103; one other anthropology course

Fall or spring, 3 credits

ANT 307 Indians of Modern Mexico and Guatemala

The transformation of Indian societies of Mexico and Guatemala after the Spanish conquest. The place of the Indian in modern society; the culture and social institutions of modern Indian communities, their economic organization, local government, religion, etc.

Prerequisites: ANT 102 or 103; one other anthropology course

Alternate years, 3 credits (not offered in 1985-86)

ANT 312 Peoples of Oceania

The study of the environment and cultures of Pacific island communities of Melanesia, Micronesia, and Polynesia. Economic, kinship, political, and religious institutions will be considered as they have been and are now changing.

Prerequisites: ANT 102 or 103; one other anthropology course

Alternate years, 3 credits (not offered in 1985-86)

ANT 316 Old World Prehistory

A survey of the major events in the prehistory of the Old World after the end of the Pleistocene (8000 B.C.). Although emphasis will be on the introduction of food-producing societies and the development of civilization, attention will also be given to the noncivilized, Bronze Age manifestations in Europe, Asia, and Africa. May not be taken for credit in addition to the discontinued ANT 216.

Prerequisites: ANT 102, 104

Alternate years, 3 credits (not offered in 1985-86)

ANT 317 New World Archaeology

A survey of the archaeological and historical Native American cultures of the New World with an emphasis on the pre-contact period. This will involve an overview of both North and South America.

Prerequisites: ANT 102 or 103; ANT 104
Alternate years, 3 credits (not offered in 1985-86)

ANT 318 Peoples of the Middle East

An introduction to the diverse ethnic groups, languages, religions, and sociocultural systems of the Middle East. Special attention is given to the ecological and sociocultural adaptations of nomads, villagers, and urbanites. Turkey, Iran, Afghanistan, the Arab states, Moslem India, and Israel will be considered in terms of their culture, history, law, and contemporary development.

Prerequisites: ANT 102 or 103; one other anthropology course
Alternate years, 3 credits (not offered in 1985-86)

ANT 320 Primate Ethology

The comparative study of behavior of ground-dwelling higher primates and other animals unrelated to humans but ecologically similar. A comparative anthropological approach to the genesis and functioning of human social systems.

Prerequisites: ANT 120 and one other anthropology course or two relevant courses in social or biological sciences as approved by the instructor
Fall or spring, 3 credits

Note: Two relevant courses in the social sciences may be substituted for the second anthropology course required as prerequisite to ANT 330 through 372 (except ANT 359 and 366). The substitutions must be approved by the instructor.

ANT 330 Health and Curing

Disease categories, cultural definitions of disease and illness, as well as folk attitudes toward treatment and cures in various cultures. Special attention is given to the folk healers and midwives as these are confronted by the medical profession. The role of women in health care will be given special emphasis.

Prerequisites: ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 350 Economic Anthropology

Economic life of primitive peoples and pre-capitalistic civilizations with emphasis on the integration of the economy with technology and with social and political institutions.

Prerequisites: ANT 102 or 103; one other anthropology course
Alternate years, 3 credits (not offered in 1986-87)

ANT 352 Personality and Culture

Culture as a factor in personality and character formation: anthropological theory and constructs will be considered in relation to such concepts as "self," "personality," and "character." The interrelationships of anthropology with its sister disciplines in the behavioral sciences will also be considered, as well as its importance for cross-cultural studies of socialization, change, and ethno-psychiatry.

Prerequisites: ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 353 Political Anthropology

The description and analysis of political institutions in a historical and comparative perspective. Selected examples from different culture areas will be considered in terms of internal structure, political processes, and organizational changes. Special attention will be given to the relationship between the political and other institutional features of the societies.

Prerequisites: ANT 102 or 103; one other anthropology course
Alternate years, 3 credits (not offered in 1986-87)

ANT 354 Family and Kinship

Concepts of family, kinship, marriage, incest, exogamy, nature, and culture and their social entailments. Major theories are discussed historically, demographically, and ecologically. Brief case studies will be presented to illustrate theories of social anthropology.

Prerequisites: ANT 102 or 103; one other anthropology course
Alternate years, 3 credits (not offered in 1985-86)

ANT 355 Legal Anthropology

The study of law processes among preindustrial, industrial, and postindustrial societies. Topics are: local-level law, state and local relations, and comparative perspectives on U.S., European, Islamic, Chinese, and Hindu law systems.

Prerequisites: ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 356 Urban Anthropology

A review of current anthropological research on family and kinship behavior, status and role, social stratification, mobility, assimilation, and political relations in complex and urban societies.

Prerequisites: ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 357 The Beginnings of Sedentary Life

An examination of the shift from mobile hunter-gatherer groups to settled life based on agriculture or on intensive exploitation of water resources. Emphasis will be placed on human adaptation to the natural environment.

Prerequisites: ANT 102 or 103; ANT 104
Alternate years, 3 credits (not offered in 1985-86)

ANT 358 Ways to Civilization

A comparative study of processes of cultural evolution from simple agricultural societies to the achievement of civilization in different parts of the world. Emphasis will be on current theories of state formation and on how these theories are supported by cultural evidence, especially from the six "pristine" states of Mesopotamia, Egypt, Indus Valley, China, Mesoamerica, and Peru.

Prerequisites: ANT 102 or 103; ANT 104
Alternate years, 3 credits (not offered in 1985-86)

ANT 359 Mesoamerican Archaeology

An introduction to concepts and methods of archaeological research applied to the study of the origins and development of pre-Columbian civilization of Middle America, with emphasis on the reciprocal relations between culture and environment. General trends in the areas of culture history and illustrative regional sequences from the establishment of sedentary farming communities to the eve of the Spanish Conquest.

Prerequisites: ANT 104, 317
Alternate years, 3 credits (not offered in 1986-87)

ANT 360 Ancient Mesopotamia

The organization and development of the Mesopotamian social, economic, political, and religious systems. Both archaeological and textual data deriving from ancient civilizations will be used, and the judicious use of ethnographic analogy will be explored as an aid in understanding this past culture.

Prerequisite: ANT 216
Alternate years, 3 credits (not offered in 1985-86)

ANT 361 Peasants

The concept of peasantry will be examined from political, religious, and social-class angles, as well as from the more traditional economic view. These agricultural peoples, who are essentially preliterate and preindustrial, are described and analyzed especially in relation to the national societies of which they form a part. Special attention is given to peasant societies in Latin America, Africa, and Asia.

Prerequisites: ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 363 Language and Culture

The study of linguistic behavior and its interrelationship with other aspects of culture. Topics include sociolinguistics, language acquisition, nonverbal behavior, and linguistic acculturation. Crosslisted with LIN 363.

Prerequisites: LIN 101 or ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 366 Museum Workshop

Advanced workshop and projects in material culture, technology, and primitive art. Students will participate in design and construction of museum exhibits, which will entail background study and individual research in this field.

Prerequisite: ANT 255
Fall or spring, 3 credits

ANT 367 Male and Female

A study of the development and manifestation of sex roles in different cultures, with an emphasis on the different adaptations of males and females in economics, politics, religion, and education.

Prerequisites: ANT 102 or 103; one other anthropology course
Fall or spring, 3 credits

ANT 371 Social and Cultural Change

An examination of the forms and processes of change that have been and now are taking place throughout the world, transforming isolated people of simple economy and social organization into participating members of modern states.

Prerequisites: ANT 102 or 103; one other anthropology course
Alternate years, 3 credits (not offered in 1985-86)

ANT 372 Anthropology of Work

Cross-cultural and contemporary studies of the organization of work, the division of labor, work groups, place of work in the community, labor relations, and collective bargaining will be discussed. Students will read and be examined on several studies of work and will also conduct independent studies of work, including interviews.

Prerequisites: ANT 102 or 103; one other anthropology course
Alternate years, 3 credits (not offered in 1985-86)

ANT 391 Topics in Anthropology

Discussion of a topic of current interest in anthropology. Topics will vary from year to year, for example, symbolism, human biology, comparative religion, and patterns of empire. May be repeated for credit as the topic varies.

Prerequisites: At least two courses, to be specified when the topic is announced
Fall or spring, 3 credits

ANT 392 Ethnographic Areas in Anthropology

Discussion of ethnographic or archaeological data from a particular part of the world. Topics and areas will vary from year to year, for example, Long Island, North America, China. May be repeated for credit as the topic varies.

Prerequisites: At least two courses, to be specified when the topic is announced
Fall or spring, 3 credits

ANT 401 Anthropological Theory

An evaluation of developments in anthropology in Britain, France, and the United States since the late 19th century and an appraisal of their effect on contemporary anthropological theory and method. May be repeated as the topic varies.

Prerequisite: ANT 300
Schedule to be announced, 3 credits

ANT 402 Problems in Archaeology

Research and discussion about selected topics in the prehistory of the Old and New Worlds. Specific problem areas will vary each year and will be announced at the beginning of the term. May be repeated as the topic varies.

Prerequisite: ANT 316 or 317
Alternate years, 3 credits (not offered in 1985-86)

ANT 403 Problems in Physical Anthropology

Research and discussion about selected topics in physical anthropology. Specific problem areas will vary each year. May be repeated as the subject matter varies.

Prerequisite: ANT 220
Schedule to be announced, 3 credits

ANT 410 Problems in Ethnology

Research and intensive examination of a selected problem in regional anthropology. The focus will vary each year and can include a broad study of an ethnographic area or a theoretical problem in a given area. Independent research and a paper are required. May be repeated as the subject matter varies.

Prerequisite: ANT 300
Alternate years, 3 credits (not offered in 1986-87)

ANT 411 Law and Conflict Resolution: Socio-legal Perspectives

Major theoretical issues in the study of law in society. Empirical data and research will illustrate ideas and theories. Topics include: folk law and state law, the legal profession, legal ethics, litigating for social change and human rights.

Prerequisites: POL 220; two other courses in socio-legal studies minor; permission of instructor
Fall or spring, 3 credits

ANT 421 Anthropological Field Methods

Methods, problems, and experience in anthropological field techniques. Course will focus on field methods in linguistics, archaeology, or cultural anthropology. The specific focus will vary each year and will be announced in advance. May be repeated as topic changes.

Prerequisites: ANT 300; permission of instructor
Alternate years, 3 credits (not offered in 1985-86)

ANT 447 Readings in Anthropology

Individual advanced readings on selected topics in anthropology. Work may be submitted for honors in anthropology. May be repeated twice.

Prerequisites: ANT 300; permission of instructor and department
Fall and spring, 3 credits

ANT 475 Undergraduate Teaching Practicum

Each student will conduct a regular recitation or tutorial section to supplement a lecture course and will receive regularly scheduled supervision from a faculty member. Responsibilities may include preparing material for discussion and helping students with research papers. Satisfactory/Unsatisfactory grading only.

Prerequisites: Senior or advanced junior anthropology major status; permission of instructor
Fall and spring, 3 credits

ANT 487 Independent Research in Anthropology

Independent research projects carried out by upper-division students in the Department of Anthropology. The student must propose the research project, carry it out, analyze the data, and submit the results in a written form acceptable to the sponsor. An outline of the research project and written agreement outlining the responsibility of the faculty member must be filed with the Undergraduate Office in Anthropology. This course may be used for the honors thesis. May be repeated up to a limit of six credits. *Prerequisites:* 15 credits in anthropology; permission of instructor and department. *Fall and spring, 3 to 6 credits*

ANT 488 Internship

Participation in local, state, and national public and private agencies and organizations. Students will be required to submit written progress reports and a final written report on their experience to the faculty sponsor and the department. May be repeated up to a limit of 12 credits. Satisfactory/Unsatisfactory grading only. *Prerequisites:* 15 credits of anthropology; permission of instructor, department, and Office of Undergraduate Studies. *Fall and spring, 3 to 12 credits*

ANT 492 Special Seminar in Anthropology

Discussion of a specific area of current interest in anthropology. Topics will change and will be announced for each semester. Students will write papers on individual research topics. May be repeated as topic varies.

Prerequisite: ANT 300

Schedule to be announced, 3 credits

Department of Art

Professors

Lawrence Alloway: Art criticism; 20th-century art.

Leopoldo Castedo, Emeritus, M.A., University of Barcelona: Art and architectural history; Latin American art and culture.

Jacques Guilmain, Director of Undergraduate Studies, Ph.D., Columbia University: Art and architectural history; medieval art; modern design.

George Koras, Diploma, Athens Academy of Fine Arts: Modeling; plastic and cast-metal sculpture.

Donald B. Kuspit, Ph.D., University of Michigan; D.Phil., University of Frankfurt: Art criticism; 20th-century and Northern Renaissance art.

Melvin H. Pekarsky, Chairperson, M.A., Northwestern University: Drawing; painting; public art.

Howardena Pindell, M.F.A., Yale University: Drawing; painting.

Associate Professors

Michael Edelson: Photography; history of photography; photographic criticism.

Aldona Jonaitis, Ph.D., Columbia University: Art and architectural history; primitive and pre-Columbian art.

James H. Kleege, Emeritus, M.F.A., Syracuse University: Design; welded metal sculpture.

Nina A. Mallory, Ph.D., Columbia University: Art and architectural history; Renaissance, baroque, and 18th-century art.

D. Terence Netter, Adjunct, M.F.A., George Washington University: Drawing; painting; art and philosophy.

James H. Rubin, Director of Graduate Studies, Ph.D., Harvard University: Art and architectural history; 18th- and 19th-century European art and criticism.

Robert W. White, part-time, Rhode Island School of Design: Drawing; terra-cotta, stone, and wood sculpture.

Assistant Professors

Michele H. Bogart, Ph.D., University of Chicago: Art and architectural history; American and 20th-century art.

Toby Buonagurio, M.A., The City College of New York: Ceramics; ceramic sculpture.

Hetty Joyce, Ph.D., Harvard University: Art and architectural history; Greek and Roman art and architecture.

Anita F. Moskowitz, Ph.D., New York University: Art and architectural history; medieval and Renaissance art.

Stephen Polcari, Ph.D., University of California, Santa Barbara: Art and architectural history; 20th-century art and intellectual history.

Lecturers

James Beatman, Adjunct, M.F.A., University of Massachusetts at Amherst: Sculpture.

Rhonda Cooper, Adjunct, M.A., University of Hawaii: Oriental art; museum and gallery administration.

Gabor B. Inke, M.D., Pazmany Peter University; D.D.S., Halle/Saale: Anatomy.

Stephen Larese, Adjunct, M.F.A., University of Cincinnati: Painting and drawing.

Thomas Thompson, Adjunct, M.F.A., University of Ohio at Athens: Photography and printmaking.

Teaching Assistants

Estimated number: 3

The undergraduate programs in art are designed to provide the student with a thorough background in the history and criticism of art, as well as sound training in studio techniques and theory. The courses of study, while allowing students a considerable degree of choice, are carefully integrated toward fulfilling requirements for graduate study or preparation for professional work in the field.

Requirements for the Major in Art History and Criticism

The major in art history and criticism leads to the Bachelor of Arts degree.

- | | |
|---|----------------|
| | <i>Credits</i> |
| 1. ARH 110 or ARH 101, 102 | 3 or 6 |
| 2. Twenty-one additional credits in art history and criticism, of which at least 12 must be upper division and so distributed as to include at least one course in five of the following areas: | |

(a) ancient art and architecture; (b) medieval art and architecture; (c) Renaissance art and architecture; (d) baroque or 18th-century art and architecture; (e) modern art and architecture (19th or 20th century); (f) Far Eastern, primitive, or pre-Columbian art and architecture	21
3. ARS 151 and ARS 152 or 190; or—especially for students planning graduate work in art history—a year of French or German in addition to the College language requirement	6
4. In consultation with the departmental advisor, six credits in humanities or social sciences, in addition to the College requirements in those areas and the recommended language year under 3, above	6
Total	36 or 39

Notes on the ARH Major

1. Of the total credits in art or related fields required for the major, only three may be taken Pass/No Credit (and the rest must be for letter grade).
2. All upper-division ARH courses must be passed with a grade of C- or higher.

Requirements for the Major in Studio Art

The major in studio art leads to the Bachelor of Arts degree.

	<i>Credits</i>
1. ARH 110 or ARH 101, 102	3 or 6
2. ARH 151	3
3. ARS 152 or 190	3
4. ARS 341 and 342	6
5. At least three additional credits in art history/criticism	3
6. Thirty-six additional credits in studio art, of which 12 must be in upper-division courses	36

7. At least 12 credits of item 6, above, must be in studio/theory courses (see Notes 1 and 5, below)

Total: 54 or 57

Notes on the ARS Major

1. Students are reminded that in the studio program only those courses designated as studio/theory courses (see Note 5, below) may count toward the 90 liberal arts credits required for the B.A. degree (see p. 56). In some cases, more than 120 credits may be needed to complete the requirements for the B.A. with a studio art major.
2. Of the total credits required for the major, only one ARH course may be taken Pass/No Credit; all ARS courses must be taken for letter grade.
3. All upper-division ARS courses must be passed with a grade of C- or higher.
4. Twelve credits in 300-400 level studio/theory can satisfy both studio/theory and upper-division requirements. Exceptions to requirements for the major and to course prerequisites are by permission of the department only and will be made only under special circumstances.
5. The following are studio/theory courses: ARS 190, 259, 291, 292, 352, 358, 365, 366, 376, 421, 422, 475, 487.

Honors Program in Art

The honors program is open to seniors majoring in art history/criticism or studio art who have maintained a grade point average of at least 3.0 overall and a 3.0 in the major. Students should apply for the honors program before the beginning of their senior year. The student must find a faculty member of the department to act as sponsor. The student, with the approval of the sponsor, must submit a proposal of a project, in writing, to the department. Acceptance into the honors program depends on the approval of the proposal by the department.

In the art history area, the student's research project will be supervised by the honors advisor. In the studio art area, the student will be expected to prepare a small one-person show or similar project (i.e., one large, more ambitious work) in lieu of a thesis, under the supervision of the honors advisor.

The student's project will be judged by a jury composed of at least two members of the Art Department and a faculty member from another department. This pertains to students in both the art history/criticism and studio art majors.

When the honors program has been carried out with distinction, conferral of honors will be contingent upon the student's achieving a 3.5 grade point average in all art courses taken in the senior year.

Minor in Art History

The minor in art history requires 18 or 21 credits in art history, of which at least nine credits must be in upper-division courses. With this minor, the student acquires both a broad background in art history and a more thorough knowledge of the art history of one of the following areas of concentration: ancient/medieval, Far Eastern/primitive/pre-Columbian, Renaissance/baroque, or modern. Further information is available from the Director of Undergraduate Studies. The distribution of courses for the minor is as follows:

	<i>Credits</i>
1. ARH 110 or ARH 101, 102	3 or 6
2. An ancient, medieval, Far Eastern, primitive, or pre-Columbian art course	3
3. A Renaissance, baroque, or modern art course	3
4. Six additional credits in the area of concentration	6
5. ARH 400, 401, 402, 403, or 487 in the area of concentration	3
Total	18 or 21

Minor in Studio Art

The minor in studio art requires 21 credits in studio art, of which at least nine credits must be in upper-division courses. The student must concentrate in one of the following tracks: drawing,

painting, or sculpture. Further information is available from the Director of Undergraduate Studies. The distribution of the courses for the minor is as follows:

Drawing	Credits
1. ARS 151	3
2. ARS 152 or 190	3
3. ARS 258 and 259	6
4. ARS 358 (twice)	6
5. ARS 421, 422, or 487	3
Total	21

Note: The student may take ARS 487 only if ARS 421 or 422 does not cover a drawing topic.

Painting	Credits
1. ARS 151	3
2. ARS 152 or 190	3
3. ARS 251 and 252	6
4. ARS 352 (twice)	6
5. ARS 421, 422, or 487	3
Total	21

Note: The student may take ARS 487 only if ARS 421 or 422 does not cover a painting topic.

Sculpture	Credits
1. ARS 151	3
2. ARS 152 or 190	3
3. ARS 261 and 262	6
4. ARS 361 and 362	6
5. ARS 365 or 366	3
Total	21

Minor in Design

	Credits
1. ARS 291	3
2. ARS 292	3
3. ARH 324	3
4. ARH 485	3
5. Any six-credit combination of ARH 487 and/or ARS 487	6
Total	18

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Art History/Criticism

ARH 101 Art in Culture from Prehistoric Times to the Age of the Cathedrals, ca. 1400 A.D.

A survey of the history of painting, sculpture, and architecture from its beginnings in prehistoric times to the end of the Middle Ages. Works of art are studied both as individual monuments with intrinsic aesthetic appeal and as expression of the needs, ideals, and aspirations of the particular society in which they were created. May not be taken for credit in addition to ARH 110.
Fall and spring, 3 credits

ARH 102 Art in Culture from the Early Renaissance, ca. 1400, to Post-Modernism

A survey of the history of painting, sculpture, and architecture from the Renaissance to the present day. Works of art are studied both as individual monuments with intrinsic aesthetic appeal and as expression of the needs, ideals, and aspirations of the particular society in which they were created. May not be taken for credit in addition to ARH 110.
Fall and spring, 3 credits

ARH 110 Honors Survey of Masterpieces of Art

An examination of selected works of art from ancient Egypt to the 20th century. Works will be studied as individual monuments with intrinsic aesthetic appeal and as expression of the needs, ideals, and aspirations of the particular society in which they were created. Classes will meet three hours per week alternately at Stony Brook and at the Metropolitan Museum of Art in New York City. May not be taken for credit in addition to ARH 101 or 102.

Prerequisite: Permission of department; priority given to Scholar Incentives students
Fall or spring, 3 credits

ARH 203 Survey of Far Eastern Art

A general course on Far Eastern art covering India, China, and Japan from its beginnings to the present. Emphasis will be on the major arts of painting and sculpture, with some reference to architecture.
Prerequisite: ARH 101 or 102 or 110
Alternate years, 3 credits (not offered in 1986-87)

ARH 204 History of Photography

A historical survey of the technical, theoretical, and aesthetic development of black and white and color still photography and its close interrelationship with the evolution of modern art.
Fall or spring, 3 credits

ARH 207 Art of the Ancient Near East

The study of the art and architecture of Mesopotamia and Egypt from Neolithic times to the Age of Alexander. Theoretical issues to be discussed will be: the development of civilization and the expression of that development in art; and the interrelationships of both art and politics and art and religion.
Prerequisite: ARH 101 or 110
Alternate years, 3 credits (not offered in 1986-87)

ARH 211 The Early Renaissance in Italy

Art in Italy in the 15th century, with special emphasis on the major figures of the period: Masaccio, Donatello, Piero della Francesca, Botticelli, and the early Leonardo.
Prerequisite: ARH 101 or 110
Fall or spring, 3 credits

ARH 300 Greek Art and Architecture

The study of ancient Greek art and architecture from the earliest beginnings in the geometric period through the archaic, classical, and Hellenistic periods.
Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 301 Roman Art and Architecture

The study of ancient Roman art and architecture from the Republic through the Constantinian period in Italy and the greater Roman world.
Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 303 The Art and Architecture of the Early Middle Ages, ca. 400-1050

After a short background introduction to Early Christian art and architecture, the course concentrates on migration and Hiberno-Saxon art, Carolingian art and architecture, and the 9th- and 10th-century art traditions of northern Spain, Anglo-Saxon England, Ottonian Germany, and Viking Scandinavia.

Prerequisites: ARH 101 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 304 The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400

The study of Romanesque, Byzantine, Gothic, and Late Gothic art and architecture. Monuments and art objects are examined in terms of their intrinsic aesthetic appeal as well as in their historical, religious, technological, and cultural contexts. The emphasis will be on the development in northern Europe.
Prerequisites: ARH 101 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 307 High Renaissance and Mannerism in Central Italy

Art and architecture in Florence and Rome in the 16th century. The High Renaissance will be studied in the works of Leonardo, Michelangelo, Raphael, and Bramante; Mannerism in the works of Pontormo, Bronzino, Gianbologna, Giulio Romano, and Vignola, among others.

Prerequisites: ARH 110 or 101, 102; one other course in the humanities
Fall or spring, 3 credits

ARH 313 Art of the United States

Painting, sculpture, and architecture from the American Revolution to modern times.

Special emphasis will be placed on John Singleton Copley, the Hudson River School, and important individual artists of the 19th and 20th centuries up to World War II.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 315 Buddhist Art

A study of the Buddhist art and architecture of India, China, Japan, and Southeast Asia. The significance of the historical Buddha and the development of Buddhism will be discussed.

Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Alternate years, 3 credits (not offered in 1986-87)

ARH 317 Pre-Columbian Art

A survey of the artistic forms of pre-Columbian civilizations from archaeological Olmecs to the architecture of Machu Pichu.

Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Alternate years, 3 credits (not offered in 1985-86)

ARH 318 History of Chinese Painting

A study of Chinese painting from its beginnings to the present, in relation to art theories written by the artists themselves and their contemporaries.

Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities. Chinese history or philosophy courses recommended.
Alternate years, 3 credits (not offered in 1985-86)

ARH 320 Art of the 18th Century

A study of the development of 18th-century European art from rococo to neoclassicism.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 322 American Art Since 1947

A survey of painting and sculpture in New York, including abstract expressionism, "hard edge" painting, pop art, minimal art, and earthworks.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 323 Major Artists

A single major artist or architect will be selected. His or her development, works, and influence on others will be carefully analyzed through lectures and class discussions. May be repeated once with departmental permission.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Alternate years, 3 credits (not offered in 1986-87)

ARH 324 Architecture and Design of the 19th and 20th Centuries

A survey of architecture and design from the end of the 18th century to the present.

Subjects and concepts covered will include the crystallization and evolution of Romantic classicism and Romantic naturalism, historicism, the arts and crafts movement, art nouveau, machine aesthetics, the beaux arts tradition, functionalism, the international style, art deco, and post-modernism.

Prerequisites: ARH 110 or 101, 102; one other course in the humanities
Fall or spring, 3 credits

ARH 326 History of Criticism

A study of the theory and development of art criticism from the Renaissance to the present.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Alternate years, 3 credits (not offered in 1986-87)

ARH 329 Primitive Art

A study of the arts of the native peoples of Africa, Oceania, Siberia, and North America. Emphasis will be on application of theories on art and religion, art and social control, and art and structuralism.

Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Alternate years, 3 credits (not offered in 1985-86)

ARH 331 The History of Japanese Art

A study of Japanese art from the prehistoric period to the 19th century. Emphasis will be placed on the major art forms of each period in relation to their socioreligious background.

Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Alternate years, 3 credits (not offered in 1985-86)

ARH 335 Shamanism and Art

An examination of the beliefs, rituals, symbols, and art of shamanism, one of the most archaic forms of religion. Topics will include paleolithic, Siberian, and Native American shamanism and art; drugs and shamanism; psychology and shamanism; and group shamanism. Crosslisted with RLS 335.

Prerequisites: ARH 101 or 102 or 110 or RLS 101; two other courses in the humanities
Alternate years, 3 credits (not offered in 1985-86)

ARH 337 Northern Renaissance Art

Painting and graphic art in the Netherlands and Germany in the 15th and 16th centuries will be studied with special emphasis on the major figures of this period, from van Eyck and van der Weyden, to Durer, Holbein, and Bruegel.

Prerequisites: ARH 101 or 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 338 Baroque Art

Painting and sculpture of the 17th century in Italy, Flanders, Holland, France, and Spain. Emphasis will be placed on the major figures of this period in each country, such as Caravaggio, Bernini, Rubens, Rembrandt, Poussin, and Velazquez.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 341 Art of the 19th Century (formerly ARH 221)

A survey of European art from about 1780 to 1890. Emphasis will be on individual artists, artistic attitudes, and progression of style. Art will be examined in its historical and cultural contexts. Movements studied will include Neoclassicism, Romanticism, Realism, and Impressionism.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 342 Art of the 20th Century (formerly ARH 224)

The major movements and individual artists in 20th-century painting and sculpture, including reference to the broader sociocultural context of art.

Prerequisites: ARH 102 or 110; two other courses in the humanities
Fall or spring, 3 credits

ARH 349 The Creative Process in the Fine Arts

An examination of the creative process and its philosophical foundations in Western culture. Students will explore highlights of the philosophical tradition since Plato, attend exhibits, rehearsals, and performances, and discuss with visiting artists their work and its sources. Crosslisted with THR 349 and MUS 349.

Prerequisites: One course in philosophy; ARH 101 or 102 or 110 or MUS 101 or 119 or THR 101 or 104

Fall or spring, 3 credits

ARH 400-403 Topics in Art History and Criticism, Ancient to Modern

Advanced seminars offered from time to time by the department, utilizing the varied areas of expertise of the art history/criticism faculty. Topics to be announced. May be repeated as subject matter varies.

Prerequisites: ARH 101 or 102 or 110; one other ARH course, varying with topic

Schedule to be announced, 3 credits each

ARH 475 Undergraduate Teaching Practicum

Each student will periodically conduct a recitation session that will supplement a regular art course. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include supplementary teaching and review sessions and assisting students with research methods. Satisfactory/Unsatisfactory grading only.

Prerequisites: Art history/criticism major; preferably senior standing; sponsorship of an instructor; permission of department

Fall and spring, 3 credits

ARH 485 Projects in Art History and Criticism in New York City

Under the supervision of a faculty advisor, the student will carry out an assignment including reading; examination of a single work or a group of works from a particular style period in New York City (its streets, its museums, or its galleries); and the preparation of a report, lecture, or critical essay. Interested students should contact the Art Department Director of Undergraduate Studies for the list of possible projects. May be repeated once.

Prerequisites: ARH 110 or 101, 102; two other ARH courses; permission of sponsor and department

Fall and spring, 3 credits

ARH 487 Independent Reading and Research in Art

A project designed by the student involving reading, research, or field work in art history or criticism conducted under the supervision of a faculty member. The course may be

repeated for a maximum of 12 credits.

Prerequisites: At least four courses in art; sponsorship of a faculty member; permission of department

Fall and spring, 1 to 6 credits

ARH 488 Internship

Participation in the work of galleries, museums, and art historical societies. Students will be required to submit written progress reports and a final report of their experience to the faculty coordinator and the department. May be repeated up to a limit of 12 credits, but no more than 6 credits may count toward the major in art history/criticism, and none toward the major in studio art. Satisfactory/Unsatisfactory grading only.

Prerequisites: 15 credits in the Art Department, of which at least 6 shall be in art history/criticism; upper-division standing with preference given to seniors; permission of instructor, department, and Office of Undergraduate Studies

Fall and spring, 3 credits

Studio and Studio/Theory

Students in all ARS courses will be expected to purchase certain supplies. Each instructor will provide a list of the supplies needed.

Only those courses designated as studio/theory courses (see "Notes on the ARS Major") may count toward the 90 liberal arts credits required for the B.A. degree.

ARS 150 Fundamentals of Drawing

An introductory course intended for non-art majors. Emphasis will be on drawing techniques, through the study of the figure and still life.

Fall or spring, 3 credits

ARS 151 Introductory Still Life, Composition, Painting, and Drawing

Introducing the student to drawing and painting media and techniques, and to the study of color, perspective, and composition.

Fall and spring, 3 credits

ARS 152 Figure Drawing and Painting

Studio course stressing drawing and painting from the nude and draped model, and investigating anatomy, foreshortening, and the expressive potential of the figure in the visual arts. May not be taken for credit in addition to ARS 190.

Fall and spring, 3 credits

ARS 161 Introduction to Sculpture for Non-art Majors

A beginning sculpture course intended for non-art majors. Emphasis will be on the exploration of basic sculpture techniques—modeling, casting, molding, carving, construction—as well as three-dimensional composition and design.

Fall or spring, 3 credits

ARS 190 Honors Introductory Art Studio: Figure Drawing and Painting

Drawing and painting in the studio of the nude and draped model and investigations of anatomy together with consideration in a seminar of the intellectual and historical bases of figure painting. May not be taken for credit in addition to ARS 152.

Prerequisite: Permission of department (portfolio required); priority given to Scholar Incentives students

Fall or spring, 3 credits

ARS 251 Intermediate Painting I

Painting and drawing for the second-year student stressing exploration of the media and craft of painting. Studio and discussion.

Prerequisites: ARH 110 or 101, 102; ARS 151 and ARS 152 or 190; permission of department

Fall and spring, 3 credits

ARS 252 Intermediate Painting II

Painting and drawing for the second-year student stressing individual development. Studio and discussion.

Prerequisites: ARS 251; permission of department

Fall and spring, 3 credits

ARS 258 Intermediate Drawing: The Human Body

Drawing for the second-year student, focusing entirely on the human body. May be repeated once.

Prerequisites: ARH 110 or 101, 102; either (a) ARS 150 or (b) ARS 151 and ARS 152 or 190; permission of department

Fall and spring, 3 credits

ARS 259 Intermediate Drawing: Conceptual Problems (Theory)

Drawing for the second-year student, focusing on conceptual processes, individual solutions to problems, and use of a wide variety of media.

Prerequisites: ARH 110 or 101, 102; either (a) ARS 150 or (b) ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 261 Fundamentals of Sculpture: Modeling, Casting, and Carving

An introduction to the techniques and formal principles of clay modeling, plaster casting, wood carving, and related methods of sculpture.

Prerequisites: ARH 110 or 101, 102; ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 262 Fundamentals of Sculpture: Welding and Related Techniques

An introduction to the techniques and formal principles of wood and metal construction methods.

Prerequisites: ARH 110 or 101, 102; ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 264 Ceramics

Investigation of ceramic ware and ceramic sculpture media, techniques, and styles through wheel, hand-built, slab, and modeled projects; firing processes with gas and electric kilns.

Prerequisites: ARH 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 271 Fundamentals of Graphics: Intaglio and Relief Processes

An introduction to etching, engraving, linoleum, woodcut, and related areas with an emphasis on techniques and aesthetics.

Prerequisites: ARH 110 or 101, 102; ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 272 Fundamentals of Graphics: Planographic Processes

An introduction to lithography and silkscreen, with an emphasis on techniques and aesthetics.

Prerequisites: ARH 110 or 101, 102; ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 281 Photography I

An intensive course with extensive practice and experimentation in the aesthetics, techniques, and materials of black-and-white photography. It will be expected that the student's academic program or vocational objectives require a legitimate need for photographic training, and the course will be structured accordingly. Students must provide their own 35mm or 2¼ x 2¼ camera with the ability for full manual operation and expect to spend approximately \$250 on materials.

Prerequisite: Sophomore standing
Fall, 3 credits

ARS 282 Photography II

An intermediate-level course for those who have mastered basic camera and darkroom techniques and have acquired an understanding of photographic aesthetics. Further exploration of photography as a means of personal visual expression, along with a continued intensive examination and

application of materials and techniques.

Students must provide their own camera and materials.

Prerequisites: ARS 281; permission of instructor after interview and review of portfolio

Spring, 3 credits

ARS 291 Two-Dimensional Design Theory and Techniques and Graphic Representation

A course in the theories and techniques of perspective drawing, isometric projection, multiphase drawings, motion studies, graphics, and analytical drawing, and their application to selected projects. Air-brush instruction is available.

Prerequisites: ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 292 Theory and Practice of Three-Dimensional Design

Theoretical and practical use of graphic (photos, drawings, paintings) and nongraphic (modulators, scale models, test models, full-scale mockups, and prototypes) media to study the elements of design in space.

Students may stress 2D or 3D presentation, and concentrate their design research or project in a field of their choice (mural, 3D painting, architecture, engineering electronics, commercial art media, etc.), but course emphasis will be on the 3D area.

Prerequisites: ARS 151 and ARS 152 or 190; permission of department

Fall or spring, 3 credits

ARS 352 Advanced Theory and Practice of Painting

Theory and practice of painting for the advanced student. Examination of ideas and techniques of painting through studio, lecture, critique, exhibition, and painting assignments. May be repeated once.

Prerequisites: ARH 341, 342; ARS 252; permission of department

Fall and spring, 3 credits

ARS 358 Advanced Theory and Practice of Drawing

Theory and practice of drawing for the advanced student. Examination of ideas and techniques of work in all drawing media through studio, lecture, critique, exhibition, and drawing assignments. May be repeated once.

Prerequisites: ARH 341, 342; ARS 258, 259; permission of department

Fall or spring, 3 credits

ARS 361 Intermediate Sculpture: Modeling, Casting, and Carving

Increasing development of craft in clay modeling, plaster casting, wood and stone carving, and related techniques.

Prerequisites: ARS 261; permission of department

Fall or spring, 3 credits

ARS 362 Intermediate Sculpture: Welding and Related Techniques

Increasing development of craft in wood and metal construction methods and related techniques.

Prerequisites: ARS 262; permission of department

Fall or spring, 3 credits

ARS 364 Intermediate Ceramics

An intermediate course in ceramics stressing sophisticated sculptural forms. Class work will be based on individual projects that will stress the expression of ideas and image-making.

Prerequisites: ARH 110 or 101, 102; ARS 264; permission of department

Fall and spring, 3 credits

ARS 365 Advanced Theory and Practice of Sculpture: Casting

Theory and practice of sculpture for the advanced student. Investment and sand casting. May be repeated once.

Prerequisites: ARH 341, 342; ARS 361; permission of department

Fall or spring, 3 credits

ARS 366 Advanced Theory and Practice of Sculpture: Welding and Related Techniques

Theory and practice of sculpture for the advanced student. All types of welding, including stick arc, electric, oxyacetylene flame. May be repeated once.

Prerequisites: ARH 341, 342; ARS 362; permission of department

Fall or spring, 3 credits

ARS 371 Intermediate Graphics: Intaglio Processes

Increasing development of craft in etching and engraving, with growing emphasis on technical specialization and individual growth as an artist.

Prerequisites: ARS 271; permission of department

Fall or spring, 3 credits

ARS 372 Intermediate Graphics: Lithography

Increasing development of craft in lithography, with growing emphasis on technical specialization and individual growth as an artist.

Prerequisites: ARS 272; permission of department

Fall or spring, 3 credits

ARS 373 Intermediate Graphics: Relief Processes

Increasing development of craft in linoleum and woodcut, with growing emphasis on technical specialization and individual growth as an artist.

Prerequisites: ARS 271; permission of department

Fall or spring, 3 credits

ARS 374 Intermediate Graphics: Silkscreen

Increasing development of craft in silkscreen, with growing emphasis on technical specialization and individual growth as an artist.

Prerequisites: ARS 272; permission of department

Fall or spring, 3 credits

ARS 376 Advanced Theory and Practice of Graphics

A graphic arts workshop and critique, stressing individual development and refinement of craft for the advanced student or professional artist. Theories and methods of various printmakers and their times will be examined. May be repeated once.

Prerequisites: ARH 341, 342; ARS 371 or 372 or 373 or 374; permission of department

Fall or spring, 3 credits

ARS 390 Special Directed Studio Projects

Explorations in studio areas not covered by the core curriculum—for example, textile arts. The student works under the guidance of a sponsor and is expected to complete a report, portfolio, or project. May be repeated once.

Prerequisites: At least three courses in studio art; sponsorship of a faculty member; permission of department

Fall and spring, 3 credits

ARS 391 Studio Workshop

A workshop offered by an Art Department faculty member or a visiting artist in a special area for part or all of the semester. May be repeated up to a limit of six credits.

Prerequisites: Four courses in studio art; permission of department

Schedule to be announced, 1 to 3 credits

ARS 392 Textile Arts: Weaving

The techniques, theory, application, and critique of textile arts including weaving, dyeing, and fiber manipulation. Techniques will include designing, drafting, loom dressing, loom and hand pattern development in four-harness structure. Design problems will emphasize color relationships, surface texture, and fibers in the growth of technical and conceptual skills. May be repeated once.

Prerequisites: ARH 110 or 101, 102; ARS 151 and ARS 152 or 190

Summer, 3 credits

ARS 421, 422 Special Topics in Studio/Theory and Practice

Special courses may be offered from time to time by the department, utilizing the unique talents and facilities of the department faculty and the University environment, and presenting particular areas for consideration on an advanced level in seminar, critique, and studio sessions. May be repeated as subject matter varies.

Prerequisite: Permission of department

Schedule to be announced, 3 credits each

ARS 475 Undergraduate Teaching Practicum: Theory and Practice

Each student will assist in the instruction of a studio section. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include assisting students to familiarize themselves with various studio and darkroom techniques

and helping students with studio projects. Satisfactory/Unsatisfactory grading only. *Prerequisites:* Studio art major; preferably senior standing; sponsorship of an instructor; permission of department

Fall and spring, 3 credits

ARS 482 Intermediate Independent Studio Projects

Intermediate-level projects for students in areas of their specific interest. Students will work independently in their area of concentration under the guidance of a sponsor with whom they will meet periodically for critique and discussion of work. Specifically designed for the student who has achieved intermediate status in one of the studio tracks (drawing, painting, sculpture, printmaking), but who is not yet prepared for advanced independent work (i.e., ARS 487). Does not count toward the 12 credits of studio/theory courses required for the ARS major. May be repeated once.

Prerequisites: Intermediate-level courses in area of project (i.e., ARS 252, 258, 259, 361, 362, 371, 372, 373, or 374); sponsorship of a faculty member; permission of department

Fall and spring, 3 credits

ARS 487 Advanced Directed Projects in Studio Theory and Practice

Advanced projects for outstanding students in areas of their specific interest. Students will work independently in their area of concentration under the guidance of a sponsor, with whom they will meet periodically for critique and discussion of work. Specific assignments, reports, readings, and field trips may be required. May be repeated once.

Prerequisites: Advanced-level status in one of the studio tracks; sponsorship of a faculty member; permission of department

Fall and spring, 3 credits

Asian Studies

Minor Coordinator

Shi Ming Hu: Social Sciences Interdisciplinary.

combines coursework in social and behavioral sciences with that in arts and humanities.

Students work out an individualized program of study in consultation with the coordinator of the Asian studies minor. They are encouraged to consider special opportunities for overseas studies programs coordinated through the Office of International Programs.

Requirements for the Minor in Asian Studies

	<i>Credits</i>
A. Two courses chosen from HIS 219, 220, 317	6
B. Two social science courses from a discipline other than history, chosen from the list below	6
C. Two humanities courses chosen from the list below	6
D. One other course from the list below	3
E. SSI 461	3

Total 24

The Asian studies minor (ANS) is designed for students interested in an interdisciplinary study of Asia that

Note: No more than one course may be taken for Pass/No Credit.

At least nine credits must be taken in upper-division courses.

Though there is no language requirement for the minor, at least one year of Chinese, Sanskrit, or an Asian language offered by the Department of Linguistics is recommended for the insight it offers into an Asian culture.

The humanities courses may be used to satisfy the social sciences major's "appropriate courses" option (see p. 180) if they are numbered 300 or above, with permission of the minor coordinator.

Social Science

- ANT 306 Peoples of Asia
 HIS 340 Intellectual History of China
 HIS 341 20th-Century China
 HIS 344 20th-Century Japan
 HIS 431 Colloquium in Asian History
 SSI 140 Introduction to China Today

Note: SSI 447 Directed Readings in Social Science and SSI 487 Independent Project in the Social Sciences may also be accepted if the topics concern Asian studies. No more than six credits of independent work may be used toward fulfillment of the minor requirement.

Humanities

- ARH 203 Survey of Far Eastern Art
 ARH 315 Buddhist Art
 ARH 318 History of Chinese Painting
 ARH 331 The History of Japanese Art

- CHI 191, 192, Intermediate Chinese I, II
 CHI 221, 222, Advanced Chinese I, II
 CHI 487 Independent Research
 PHI 111 Introduction to Eastern Philosophy: Classical Texts
 PHI 112 Introduction to Eastern Philosophy: Interpretations
 PHI 239 Japanese Philosophy and Aesthetics
 PHI 340 Indian Buddhism: Its Essence and Development
 PHI 342 Chinese and Japanese Buddhism
 RLS 240 Confucianism and Taoism
 RLS 246 Korean and Japanese Religions
 RLS 260 Buddhism
 RLS 341 Meditation and Enlightenment
 RLS 370 Tibetan Buddhism
 RLS 372 Buddhist Classics

Courses in Chinese

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

CHI 111, 112 Elementary Chinese I, II

An introduction to spoken and written Chinese Mandarin, with equal attention to speaking, reading, and writing. Laboratory practice supplements class work. No student who has had two or more years of Chinese in high school or who has otherwise acquired an equivalent proficiency will be permitted to enroll in CHI 111 without written permission from the supervisor of the course. Fall (111) and spring (112), 3 credits each semester

CHI 191, 192 Intermediate Chinese I, II

An intermediate course in Chinese Mandarin to develop audiolingual skills and reading and writing ability. Selected texts will serve as the basis for practice in reading comprehension and composition. Intensive exercises in "character writing" will be required to develop writing technique. Prerequisite: CHI 112. Fall (191) and spring (192), 3 credits each semester

CHI 221, 222 Advanced Chinese I, II

An advanced course in Chinese Mandarin to increase comprehension and writing ability. Selected reading materials include newspapers, contemporary Chinese literature, and other samples of different writing styles. Prerequisite: CHI 192. Fall (221) and spring (222), 3 credits each semester

CHI 475 Undergraduate Teaching Practicum

Each student will conduct a weekly recitation section that will supplement a lecture course. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion and helping students with practice sessions. Satisfactory/Unsatisfactory grading only. Prerequisites: Interview; permission of instructor. Fall and spring, 3 credits

CHI 487 Independent Research

An individual research project in Chinese, such as translation, analysis of documents or literature, etc., in consultation with the instructor. Students are expected to meet at regular intervals and to present the completed project at the end of the semester. May be repeated. Prerequisites: CHI 222; permission of instructor. Fall and spring, 3 credits

BIOLOGICAL SCIENCES

Divisional Teaching Assistants

Estimated number: 50

Department of Biochemistry

Distinguished Professor Emeritus

H. Bentley Glass, Ph.D., University of Texas: Human genetics; history of genetics.

Distinguished Teaching Professor

Elof Axel Carlson, Ph.D., Indiana University: Mutation and gene structure; history of genetics; human genetics.

Professors

Norman Arnheim, Jr., Ph.D., University of California, Berkeley: Gene expression in mammalian multigene families.

Vincent P. Cirillo, Ph.D., University of California, Los Angeles: Membrane transport processes in yeast and bacteria.

Eugene A. Davidson, Adjunct, Ph.D., Columbia University: Study of proteoglycans and glycoproteins.

Bernard S. Dudock, Ph.D., Pennsylvania State University: Structure and function of cellular and viral tRNA. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74.

Frank C. Erk, Ph.D., The Johns Hopkins University: Nutritional factors in insect development; developmental genetics; human genetics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1981-82.

Masayori Inouye, Chairperson, Ph.D., Osaka University: Biochemistry of membranes; regulation of gene expression.

Monica Riley, Ph.D., University of California, Berkeley: Bacterial genetics.

Richard B. Setlow, Adjunct, Ph.D., Yale University: DNA repair; biological effects of ultraviolet and ionizing radiation.

Melvin V. Simpson, Ph.D., University of California, Berkeley: Replication of mitochondrial DNA; conformational changes in ribosomes.

F. William Studier, Adjunct, Ph.D., California Institute of Technology: Genetics and physiology of bacterial viruses.

Associate Professors

Martin Freundlich, Ph.D., University of Minnesota: Regulation of gene expression.

Abraham D. Krikorian, Ph.D., Cornell University: Plant growth and development.

Kenneth B. Marcu, Ph.D., State University of New York at Stony Brook: Organization, mechanisms of expression, and evolution of eukaryotic multigene systems.

Carl Moos, Ph.D., Columbia University: Molecular mechanisms of muscle contraction.

Raghupathy Sarma, Ph.D., Madras University: X-ray crystal structure analysis of molecules of biological interest.

Jakob Schmidt, Ph.D., University of California, Riverside; M.D., University of Munich: Neurochemistry.

Sanford R. Simon, Ph.D., Rockefeller University: Structure-function relationships in hemoglobin; membrane biochemistry.

Rolf Sternglanz, Ph.D., Harvard University: DNA replication.

Assistant Professors

Paul M. Bingham, Ph.D., Harvard University: Regulation of transcription in and transposon biology of developing multicellular organisms.

Erwin London, Ph.D., Cornell University: Membrane biochemistry and biophysics.

Manuel Perucho, Ph.D., University of Madrid: Isolation and characterization of human tumor genes.

Douglas Youvan, Adjunct, Ph.D., University of California, Berkeley: Molecular genetics of the light reactions in photosynthetic bacteria.

Department of Ecology and Evolution

Professors

Douglas J. Futuyma, Ph.D., University of Michigan: Ecological genetics; coevolution of plants and insects. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74.

Lev R. Ginzburg, Ph.D., Agrophysical Institute, Leningrad: Evolutionary theory; mathematical population genetics; theoretical and applied ecology.

Richard K. Koehn, Ph.D., Arizona State University: Population genetics; enzyme functions and adaptation in natural populations.

Jeffrey S. Levinton, Chairperson, Ph.D., Yale University: Marine benthic ecology; population genetics of bivalve mollusks; paleoecology.

R. James Rohlf, Ph.D., University of Kansas: Multivariate data analysis applied to taxonomy and ecology; applied ecology.

Lawrence B. Slobodkin, Ph.D., Yale University: Evolutionary theory and applications of ecological principles.

Robert R. Sokal, Ph.D., University of Chicago: Numerical taxonomy; theory of systematics; geographic variation; spatial models.

George C. Williams, Ph.D., University of California, Los Angeles: Evolution of life-history strategies; ecology and population genetics of marine fishes.

Associate Professors

Edwin H. Battley, Ph.D., Stanford University: Energetics of microbial growth and microbial ecology.

Michael A. Bell, Ph.D., California State University: Evolutionary biology; population genetics; ichthyology; paleobiology and geographic variation.

Barbara L. Bentley, Ph.D., University of Kansas: Nitrogen fixation; plant-animal interactions; tropical ecology.

James S. Farris, Ph.D., University of Michigan: Theory of phylogenetic inference.

George J. Hechtel, Director of Undergraduate Studies, Ph.D., Yale University: Systematics and zoogeography of marine demospongiae. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1981-82.

Robert E. Smolker, Ph.D., University of Chicago: Applied ecology; ornithology; public interest environmental law.

Assistant Professors

Walter F. Eanes, Ph.D., State University of New York at Stony Brook: Population and biochemical genetics of *Drosophila*; molecular evolution.

James A. Fowler, Emeritus, Ph.D., Columbia University: Developmental biology; computer models.

Elizabeth J. Mallon, Ph.D., University of Michigan: Biological education; curriculum development and teacher education.

James D. Thomson, Ph.D., University of Wisconsin: Pollination biology; plant reproductive systems; community ecology.

Department of Neurobiology and Behavior

Professors

Paul R. Adams, Ph.D., London University: Biophysical aspects of synaptic transmission.

Albert D. Carlson, Ph.D., University of Iowa: Neurophysiology, pharmacology, and behavior of fireflies. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1982-83.

David H. Cohen, Chairperson, Ph.D., University of California, Berkeley: Cellular mechanisms of conditioning; neural control of the cardiovascular system.

Harvey J. Karten, M.D., Albert Einstein College of Medicine: Comparative neuroanatomy and histochemistry.

Jeffrey F. McKelvy, Ph.D., The Johns Hopkins University: Peptide-secreting neurons; molecular neurobiology.

Stuart A. McLaughlin, Ph.D., University of British Columbia: Biophysics of membranes.

Lorne M. Mendell, Ph.D., Massachusetts Institute of Technology: Spinal physiology; modifiability of spinal circuitry.

Robert Y. Moore, M.D., Ph.D., University of Chicago: Organization, development, and plasticity of central monoamine neuron systems; central neural mechanisms in circadian rhythm regulation.

S.M. Sherman, Ph.D., University of Pennsylvania: Functional organization and plasticity of mammalian visual systems.

Associate Professors

John B. Cabot, Ph.D., University of Virginia: Neural control of the cardiovascular system.

Robert W. Merriam, Ph.D., University of Wisconsin: Developmental movements and their molecular basis in egg cells.

Sheryl A. Scott, Ph.D., Yale University: Developmental neurobiology.

Bernard D. Tunik, Ph.D., Columbia University: Physiology and mechanics of muscle contraction.

Stephen Yazulla, Ph.D., University of Delaware: Electrophysiology, synaptic organization, and pharmacology of the vertebrate retina.

Birgit Zipser, Adjunct, Ph.D., Albert Einstein College of Medicine: Electrophysiological neuropeptide monoclonal antibody techniques.

Assistant Professors

Martha C. Bohn, Ph.D., University of Connecticut: Hormonal effects on neuronal development.

N.T. Carnevale, M.D., Ph.D., Duke University: Neuronal oscillations, dendritic electrotonus, and the cellular neurobiology of immune-related disorders.

Angel L. de Blas, Ph.D., Indiana University: Neurochemistry; synaptic function; molecular mechanisms of cellular recognition during synaptogenesis.

L. Craig Evinger, Ph.D., University of Washington: Control of eye movements.

Simon Halegoua, Ph.D., State University of New York at Stony Brook: Molecular basis of neuronal determination and differentiation.

Joel M. Levine, Ph.D., Washington University: Identification and biochemical characterization of cell surface molecules of the developing central nervous system.

Gary G. Matthews, Ph.D., University of Pennsylvania: Cellular neurophysiology of the vertebrate central nervous system; visual transduction; synaptic transmission.

William T. Newsome, Ph.D., California Institute of Technology: Cortical processing of visual information in the primate brain.

Physical Facilities in the Biological Sciences

Three departments—Biochemistry, Ecology and Evolution, and Neurobiology and Behavior—have faculty offices and research laboratories in the Life Sciences Building. Faculty research laboratories are used by students involved in individual research projects. Divisional course laboratories and their preparation areas are located in the Life Sciences and Laboratory Office Buildings. The Biological Sciences complex also includes a separate library and a 15-bay greenhouse.

An undergraduate information office is located in the Life Sciences Building.

Programs in the Biological Sciences

The Division of Biological Sciences sponsors programs in two undergraduate majors: biochemistry (BCH) and biological sciences (BIO). Both majors lead to the Bachelor of Science degree.

The undergraduate program in biochemistry provides an introduction to the chemical basis of biological phenomena. The student is prepared primarily for graduate study in biochemistry or other biological sciences and for professional study in the health sciences. The program is based on a core of introductory courses in biology, chemistry, and biochemistry, with pertinent courses in mathematics and physics.

The undergraduate program in biological sciences introduces the principles and methodology of the biological sciences. The student can prepare for graduate study, for professional study in the health sciences, for secondary school teaching, and for certain positions in industry and research.

Requirements for the Biochemistry Major

All courses offered for the major must be taken for a letter grade, and a grade point average of 2.0 or higher must be obtained for all courses numbered 300 or over listed in group B below.

Group A	Credits
1. CHE 131, 132 General Chemistry or 141, 142 Honors Chemistry	8
2. CHE 133, 134 General Chemistry Laboratory or 143, 144 Honors Chemistry Laboratory	2
3. CHE 321, 322 Organic Chemistry or 331, 332 Honors Organic Chemistry	6
4. CHE 327 Organic Chemistry Laboratory A (CHE 333, 334 Organic Chemistry Laboratory B, 4 credits, may be substituted.)	2
5. CHE 301 or 312 Physical Chemistry	3

6. MAT 131, 132 Calculus I, II or 141, 142 Calculus Alpha, Beta (MAT 125, 126, 127, 9 credits, may be substituted)	8
7. MAT 231 or 241 Calculus III (Linear Algebra) or 221 Calculus III (Differential Equations)	3
8. PHY 101, 102 General Physics I, II	8
9. PHY 251 General Physics III or ESG 281 An Engineering Introduction to the Solid State	4
Subtotal	44

Group B

1. BIO 151, 152 Principles of Biology	8
2. BIO 220 General Genetics	3
3. BIO 361, 362 Biochemistry I, II	6
4. BIO 365 Biochemistry Laboratory	2
5. One additional course from the list below, chosen in consultation with the advisor:	
BIO 366 Crystal Structure of Macromolecules	
BIO 409 Current Research in Structure and Function of Proteins	
BIO 410 Current Research in Nucleic Acids and Molecular Genetics	
BMO 504 Protein and Nucleic Acid Synthesis	
BMO 505 Microbial Regulatory Mechanisms	
BMO 506 Membranes and Transport	
BMO 507 Neurochemistry	
BMO 513 Enzymology	
BMO 517 Biomembranes	2-4
Subtotal	21-23
Total	65-67

In addition to the courses listed above, certain other courses with BMO, HBH, HBM, or HBP designators may be selected from the *Graduate Bulletin* with the permission of the undergraduate advisor. Research may not be used to satisfy major requirements; however,

biochemistry majors are encouraged to do research in biochemistry or molecular biology (BIO 488 or similar course).

The following sample program is suggested.

Freshman Year

General Chemistry and the Laboratories
Calculus I and II

Sophomore Year

Principles of Biology
Calculus III
Organic Chemistry and the Laboratory

Junior Year

Biochemistry
General Genetics
Physics I and II

Senior Year

Physics III
Physical Chemistry
Experimental Biochemistry Laboratory
Elective

Honors Program in Biochemistry

Students who wish to apply for graduation with honors in biochemistry must: (1) maintain a cumulative grade point average of 3.5 or higher in courses listed under groups A and B above; (2) carry out research under BIO 488; and (3) submit a thesis based on the results of the research performed. Three copies of the completed thesis must be submitted to the student's research advisor no later than 21 days before the date of graduation. Conferral of honors is contingent upon the recommendation of a Reading Committee consisting of the research advisor, another member of the Biochemistry Department, and a member from another department in a related field.

Requirements for the Biological Sciences Major

All courses offered for the major must be taken for a letter grade. Courses taken under P/NC may not be applied to the major.

A. Study within Biology

1. Principles of Biology: BIO 151, 152
2. Lecture/Seminar Courses

At least one lecture or seminar course in four of the following five

areas of inquiry:

Area I Cell Biology and Biochemistry
BIO 310, 313, 361, 362, 366

Area II Genetics and Development
BIO 220, 321, 322, 326, 327

Area III Neurobiology and Physiology
BIO 230, 330, 334, 374, 376, 377, 379

Area IV Organisms
BIO 341, 342, 343, 344, 345, 347, 383

Area V Ecology and Evolution
BIO 350, 351, 353, 354, 355, 357, 358, 359, 385

The applicability of special seminars (BIO 401-405) to area requirements will be announced.

Courses taken elsewhere apply to area requirements only when explicitly authorized by the Biology Divisional transfer evaluator.

Students in the Biology Teacher Preparation Program must take a course in each of the five areas, for a letter grade.

3. Laboratory Experiences

(a) A laboratory course, or course including laboratory, in two of the four areas chosen from section 2, as listed below. (Some of these courses also apply to the lecture/seminar requirements of section 2.)

Area I	BIO 365
Area II	BIO 321, 324
Area III	BIO 232, 335, 339
Area IV	BIO 341, 342, 343, 344, 383
Area V	BIO 352, 356; 386

(b) A third laboratory experience, to be met by any of the courses listed in 3(a) or by research (BIO 486, 487, 488, 489). Research in the Health Sciences may meet the requirement if approved by the Divisional Undergraduate Studies Committee.

Note for Transfer Students:

Laboratories taken elsewhere apply to section 3 requirements only when explicitly authorized by the Biology Divisional transfer evaluator. At least one of the three laboratories required by section 3 must be taken at Stony Brook.

4. Electives

Additional courses to make a total of 30 credits in biology courses offered for the major. These electives may be selected from any of the area courses listed under sections 2 and 3, and from non-area courses for majors (BIO 301, 302, 305, 401-405). A maximum of two credits of readings (BIO 446, 447, 448, 449) and a maximum of eight credits of research (BIO 486, 487, 488, 489) can be applied to the 30-credit requirement. Electives may also be chosen from a diverse list of courses offered by other departments. The current list is available from the Biology Undergraduate Studies Office.

Transfer students must take at least 15 of the 30 credits at Stony Brook (excluding BIO 151, 152); of these, at least 12 must be taken in the Division of Biological Sciences.

5. Quality Requirements

At least 20 of the 30 courses in section 4 must be passed with a grade of C or higher. Transfer students must obtain at least 10 of the 20 quality credits from Stony Brook courses.

6. Study in Depth

Every biological sciences major must explore one aspect of biology in greater depth, and preferably in a course with extensive faculty-student interaction. The requirement can be met in any one of the following three ways:

(a) a second lecture/seminar course in one of the areas of inquiry listed in section A-2

(b) BIO 301 or 339 or 356

(c) any 400-level BIO course (including those in education that do not apply to sections 2 through 5).

7. Transfer Student Summary

Transfer students are reminded that biology courses taken elsewhere do not meet major requirements unless authorized by the Biology Divisional transfer evaluator, or in a SUSB transfer booklet. Transfer students must take 15 of the 30 total credits (section 4), 10 of the 20 "quality credits" (section 5), and one of the

three laboratory experiences (section 3) at Stony Brook. The divisional evaluator can be contacted at the Biology undergraduate advising office in the Life Sciences Building.

B. Courses Required in Related Fields

1. Chemistry and Physics

One year of introductory chemistry with laboratory: CHE 131, 132 or 141, 142 and CHE 133, 134 or 143, 144.

One year of organic chemistry, with one semester of laboratory: CHE 321, 322 or 331, 332; and CHE 327 or 333.

One year of physics with laboratory: PHY 103, 104 or 101, 102.

2. Mathematics

A year of calculus (MAT 125, 126 or 131, 132 or 141, 142) and an approved third semester of probability and statistics (BIO 305 or AMS 110 or 310).

Additional mathematics is recommended for many areas of research.

Biology Teacher Preparation Program

This program is designed for the biology major who is preparing to teach in the junior or senior high school. It includes observational experiences in biology classrooms, practice using various biology curricula, study of foundations of education, a laboratory-oriented methods course, a student teaching experience, and a seminar to help solve student teaching problems.

The normal course sequence leading to certification is: BIO 200, SSI 350 Foundations of Education, SSI 265 Drug and Alcohol Education, BIO 300, BIO 450, and BIO 454. These courses are in addition to those required of biology majors. Students in the secondary education program must complete at least one lecture/seminar in each of the five areas of biological inquiry.

Guidelines to the Teacher Selection Committee include a minimum overall G.P.A. of 2.7 (at SUSB and previous institutions).

All courses required for the Teacher Preparation Program must be taken for

a letter grade. Courses taken under P/NC may *not* be applied to the program.

See requirements for "Study within Biology," p. 74.

Honors Program and Independent Study in Biological Sciences

Divisional majors with a grade point average of 3.5 or higher in courses in the biological sciences and related fields (see A and B, above) are eligible to apply for candidacy in the Honors Program. A potential honors student must obtain a sponsor (and a co-sponsor in biological sciences, if the sponsor is not a member of the division). The student should be enrolled in BIO 486-89 (Research) or its equivalent (e.g., research courses in health sciences, Independent Study Program), normally for two semesters.

Application is made to the Divisional Undergraduate Studies Committee (USC) in the form of a proposal or interim report, approved by the sponsor. Applications normally are submitted at the beginning of the last semester of the project, and must be submitted no later than one month before graduation. The USC will appoint an examination committee for approved candidates.

The honors thesis has the format of a master's thesis and must be written solely by the student. Three copies of the thesis must be submitted to the examination committee no later than Monday of the penultimate week of classes (excluding final examination week). The student will meet with the examination committee for a formal thesis defense, no later than Monday of the last week of classes. If satisfied, the examination committee should schedule a public seminar by the candidate, to be given no later than the last day of classes. A copy of the thesis, with approvals page, must be sent to the divisional USC for final review of the grade point average (which must be no less than 3.5 in the biological sciences and related fields). Conferment of honors also requires maintenance of the highest standards of academic integrity by the student.

Requirements for the Minor in Biological Sciences

The biological sciences minor, which is for students in majors other than biological sciences and biochemistry, requires completion of at least 20 credits in those biology courses designed for the biological sciences major, including:

- A. BIO 151 Principles of Biology: From Organisms to Ecosystems
- B. BIO 152 Principles of Biology: From Molecules to Organisms
- C. Nine credits at the 300 level, which must be passed with a C or higher
- D. A lecture/seminar course in at least two of the five areas of inquiry (I-V) listed under the biological sciences major.

Note: Transfer students must complete at least 12 of the 20 credits at Stony Brook. Courses must be taken for a letter grade.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

BIO 101, 102 Biology: A Humanities Approach

The major concepts of biology are presented from historical, contemporary, and critical viewpoints. These concepts include the cell, the gene, molecular biology, development, and evolution. The human implications or values associated with each concept are emphasized. For students not majoring in the biological sciences.

Prerequisite to BIO 102: BIO 101

Fall (101) and spring (102), 3 credits each semester

BIO 103 Introduction to Human Biology

A basic course in biology using the human as the subject, including cellular structure and function, anatomy and physiology of organ systems, and integrative functions of the whole person. Not for major credit, and not designed for preprofessional students.

Fall, 3 credits

BIO 104 Human Health and Illness

A study of the human in health and illness, including basic components of health such as nutrition, biorhythms, growth and development, pregnancy, and aging and death; common health problems—their recognition, essentials of evaluation, and

management and significance to the individual and society; and the development of personal skills in self-health evaluation, first aid, and basic cardiopulmonary resuscitation. Not for major credit, and not designed for preprofessional students.

Prerequisite: BIO 103

Spring, 3 credits

BIO 105 Human Reproduction

Human reproduction is examined from a biological viewpoint. This includes anatomy, physiology, conception, pregnancy, intrauterine development, contraception, disorders and diseases, attitudes and values. For students not majoring in the biological sciences.

Fall, alternate years, 3 credits (not offered in 1986-87)

BIO 111 Genetics and Man

A general introduction to genetics, with special attention to its importance in medicine, agriculture, and other aspects of human life and culture. For students not majoring in the biological sciences.

Fall or spring, 3 credits

BIO 113 General Ecology

Designed to provide a sense of the problems of modern ecology. Population growth and regulation, interspecific interactions in natural communities, and the concept of the balance of nature will be analyzed. The mutual relation between human activities and ecology will be discussed. Mathematics is not a prerequisite but might prove helpful. For students not majoring in biological sciences.

Fall and spring, 3 credits

BIO 114 The Aquatic World

An introduction to the animals, plants, and communities of the sea, rivers, and lakes. Visits to on-campus exhibits. For students not majoring in biological sciences.

Prerequisite: High school biology

Spring, alternate years, and summer, 3 credits (not offered in 1986-87)

BIO 115 Evolution and Society

The historical development of evolutionary thought, the evolutionary diversification of life, and the mechanisms of evolution are presented. The geological, genetic, and other biological principles necessary to comprehend evolutionary concepts are presented as background. Current controversies over the evidence for evolution are reviewed. Human evolution, medical and agricultural applications of evolutionary theory, and its implications for the development of human and other social systems will be considered. An introductory course in biology is not a prerequisite, but would be helpful. For students not majoring in biological sciences.

Fall, alternate years, 3 credits (not offered in 1985-86)

BIO 151 Principles of Biology: From Organisms to Ecosystems

A survey of the diversity and evolutionary history of major groups of organisms, ecological relations of organisms to their environments, elementary genetics, and the mechanisms of evolution. Intended for prospective majors. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: High school biology and chemistry

Fall, 4 credits

BIO 152 Principles of Biology: From Molecules to Organisms

The chemical and cellular bases of structure, energy metabolism, and heredity in living organisms, and the reproduction, development, and physiology of animals. Intended for prospective majors. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: High school biology and chemistry

Spring, 4 credits

BIO 200 Introduction to Biology Teaching

Materials used in teaching secondary school biology. Approaches to teaching strategies, lesson planning, student testing and evaluation. Observation of classroom activities in selected junior and senior high school biology classrooms. Two hours of lecture and one three-hour laboratory per week. Not for major credit.

Prerequisite: BIO 151

Fall, 3 credits

BIO 220 General Genetics

An introductory course in genetics for biology majors. General areas to be discussed include transmission genetics, cytogenetics, immunogenetics, molecular genetics, population genetics, and quantitative genetics.

Prerequisites: BIO 151, 152

Pre- or corequisite: CHE 131 or 141

Fall, 3 credits

BIO 229 Introduction to Anatomy and Physiology for Pre-Nursing Students

Study of the structure and function of the skeletal, nervous, muscular, circulatory, respiratory, digestive, and urogenital systems for pre-nursing and related programs. Not for major credit.

Prerequisites: BIO 151, 152

Corequisite: BIO 231

Fall, 3 credits

BIO 230 Human Physiology

The basic principles of human physiology. The subject matter includes circulation, respiration, nutrition, excretion (and their control by the nervous and endocrine

systems), and sensation and coordination. May not be taken for credit in addition to HBY 350.

Prerequisites: BIO 151, 152; CHE 131 or 141, or 111, 112

Spring, 3 credits

BIO 231 Anatomy Laboratory for Pre-Nursing Students

Mammalian anatomy, with emphasis on an intensive dissection of the cat. Not for major credit.

Prerequisites: BIO 151, 152

Fall, 1 credit

BIO 232 Physiology Laboratory for Pre-Nursing Students

Laboratory studies in mammalian physiology, designed to complement BIO 230. May not be taken for credit after BIO 335 or 339.

Prerequisites: BIO 229, 231

Pre- or corequisite: BIO 230

Spring, 1 credit

BIO 300 Instructional Strategies and Techniques

The second course in a series for prospective secondary school teachers of biology. It emphasizes instructional strategies and techniques necessary to create and implement inquiry and discovery activities of an investigative nature. Laboratory skills, preparations, life-support systems for organisms, question-asking strategies, and a humanistic approach to teaching are stressed. Three hours of discussion or lecture and one three-hour laboratory per week. Not for major credit.

Prerequisite: BIO 200

Spring, 4 credits

BIO 301 Biological Literature and Its Use

Use of a research library in biology. Preparation and use of bibliographies; various philosophies of classification of literature, information storage, and retrieval. A review paper, meeting professional standards of style, will be required.

Prerequisite: At least 14 credits of biology major's courses

Fall, 1 credit

BIO 302 Computers for Biologists

An overview of computers, the way they work, the tasks they can do, and some of the roles they play in biological research. Students will be guided in writing simple programs in BASIC and operating a simple computer. Other computer languages will be discussed along with assembly language.

Prerequisites: At least 14 credits of biology major's courses; permission of instructor

Spring, 2 credits

BIO 305 Statistics for Biologists

An introductory statistics course for students in all areas of biology. Normal statistics to analysis of variance, regression analyses, and transformations. Nonparametric tests and chi-square testing. Properties of distributions and tests of fit to distributions. Fundamentals of probability theory, statistical decision theory, and the concept of statistical inference.

Prerequisite: Completion of one of the required calculus options

Fall or spring, 3 credits

BIO 310 Cell Biology

The cell is studied as the unit of structure, biochemical activity, genetic control, and differentiation. The principles of biochemistry and genetics are applied to an understanding of nutrition, growth, and development.

Prerequisites: BIO 152; CHE 321 or 331

Spring, 3 credits

BIO 313 Genetic Engineering and Recombinant DNA

(formerly BIO 363) Recent advances in gene cloning and cell cloning methodologies will be described. Examples will be given of applications of these techniques to molecular biology, developmental biology, and commercial manufacture, as well as to whole-animal cloning and genetic engineering. May not be taken for credit after BIO 362.

Prerequisites: BIO 220; CHE 131 or 141

Fall, 3 credits

BIO 321 Animal Embryology

A survey of the developmental anatomy of vertebrates. Laboratory exercises consist of the study of embryonic development from sectioned material and whole embryos of selected vertebrates. Lectures and readings cover the principal developmental sequences and some of the important experimental analyses of these processes. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: BIO 151, 152

Fall and spring, 4 credits

BIO 322 Animal Development

An introductory analysis of the development of form and function in animals emphasizing the experimental evidence underlying general principles. Topics covered include differentiation, determination, positional information, molecular developmental genetics, cell-cell interactions, and hormonal regulation.

Prerequisite: BIO 220

Pre- or corequisite: CHE 321 or 331

Spring, 3 credits

BIO 324 Laboratory in Animal Development

Laboratory studies designed to complement BIO 322, emphasizing the use of live invertebrate organisms in the analysis of developmental events. One hour of recitation and one three-hour laboratory per week.

Pre- or corequisite: BIO 322

Spring, 2 credits

BIO 326 History of Genetics

A history of genetics from Mendel's contributions through the 1950s. The contributions of Bateson, Morgan, and Muller will be emphasized for the schools they founded. The problems of gene size, number, and function will be studied along with the ties of genetics to evolution, development, biochemistry, and human heredity.

Prerequisite: BIO 220 or HIS 351

Fall, 3 credits

BIO 327 Human Genetics

A consideration of the principles of genetics as they apply to humans. The course includes Mendelian inheritance, cytogenetics, immunogenetics, developmental genetics, and population genetics and gives attention to genetic counseling and genetic screening.

Prerequisite: BIO 220

Spring, 3 credits

BIO 330 Comparative Physiology

An introduction to the physiological adaptations of various animal species to environmental variables. Emphasis is placed on homeostatic mechanisms at the organismic level.

Prerequisite: BIO 230

Fall, 3 credits

BIO 334 Principles of Neurobiology

The ionic basis of nerve potentials, the physiology of synapses, sense organs and effectors, and the integrative action of the nervous system will be discussed.

Prerequisite: BIO 230

Fall, 3 credits

BIO 335 Animal Physiology Laboratory

Laboratory exercises designed to illustrate principles learned in BIO 230. Topics include muscles and hormones, physiological activities of nerves, circulation, respiration, excretion, digestion, sensory function, and central processes of coordination. One hour of lecture and one three-hour laboratory per week. May not be taken for credit after BIO 339.

Prerequisites: BIO 230; CHE 132, 133

Fall, 2 credits

BIO 339 Experimental Physiology

An analytical approach to selected topics, including active transport, bioelectric potentials, receptor and effector organs, and neural and hormonal regulatory mechanisms. Students will contribute to the selection of topics and will design the experiments. Three hours of laboratory and two hours of discussion per week.

Prerequisite: BIO 330 or 334
Fall, 3 credits

BIO 341 Life in Water

Evolution, diversity, and adaptations of water-dwelling chordates and plants and of freshwater invertebrates. Study of the transitions from water to land and land to water. May not be taken for credit after BIO 383. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: BIO 151, 152
Spring, 4 credits

BIO 342 Comparative Biology of the Nonvascular Plants

A summary of the biology of the algae, fungi, slime molds, lichens, liverworts, hornworts, and mosses. The course will include considerations of the morphology, physiology, ecology, and biochemistry of these groups. Three hours of lecture and three hours of laboratory each week.

Prerequisites: BIO 151, 152; CHE 322 or 332
Fall, 4 credits

BIO 343 Marine Invertebrate Zoology

A study of the diversity, comparative and functional morphology, natural history, and evolution of multicellular marine invertebrates. Three hours of lecture and one three-and-one-half-hour laboratory per week.

Prerequisites: BIO 151, 152; or corequisite: GEO 302
Fall, 4 credits

BIO 344 Chordate Zoology

An introduction to the diversity, comparative and functional morphology, natural history, and evolution of chordates, with interest centered on the modern fauna. Three hours of lecture or discussion and one three-and-one-half-hour laboratory each week.

Prerequisites: BIO 151, 152
Spring, 4 credits

BIO 345 Ornithology

Systematics, ecology, and evolution of birds with emphasis on comparative biology and unique features. Topics selected from behavior, reproductive biology, migration, zoogeography, population regulation, vocalization, color patterns, nest parasitism, and flight.

Prerequisites: BIO 151, 152
Spring, 3 credits

BIO 347 Botanical Technology

An introduction to the developmental origin, structure, and growth of the higher plant body as a basis for understanding the broader principles of plant biology and biosynthesis of useful products, as well as the relations of plants to human life.

Economically important plants and their products, especially as sources of food, shelter, clothing, drugs, and industrial raw materials, are stressed. Current problems in agriculture, medicine, plant industry, and biotechnology, as well as the use, conservation, and appreciation of plants are included. May not be taken for credit in addition to the discontinued BIO 240.

Prerequisites: BIO 151, 152
Pre- or corequisite: CHE 321 or 331
Fall, 3 credits

BIO 350 Adaptation and Evolution

Studies of adaptation in organisms, community dynamics, ecology, and the theory of evolution. May not be taken for credit after BIO 351 or 354.

Prerequisites: BIO 151, 152; MAT 125 and BIO 220 recommended
Fall and spring, 3 credits

BIO 351 Ecology

An examination of the interactions of living organisms with their physical and biological environments. Special attention is given to population dynamics and the interactions among organisms that determine the structure, function, and evolutionary development of biological communities.

Prerequisites: BIO 151, 152; completion of divisional mathematics requirement
Fall, 3 credits

BIO 352 Ecology Laboratory

Stresses the collection, analysis, and interpretation of ecological data, mostly in terrestrial settings. Laboratory and field exercises demonstrate the operation of general ecological principles in specific populations and communities. One lecture, one three-hour field trip or laboratory weekly, plus one hour of discussion. Three all-day Saturday field trips.

Pre- or corequisite: BIO 351
Fall or spring, 3 credits

BIO 353 Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean will be discussed. Crosslisted with GEO 353.

Prerequisite: BIO 343
Spring, 3 credits

BIO 354 Evolution

A detailed discussion of the mechanisms of evolution, focusing on the ways in which genetic changes in populations lead to adaptation, speciation, and historical patterns of evolutionary change.

Prerequisites: BIO 220 or 350; completion of divisional mathematics requirement
Spring, alternate years, 3 credits (not offered in 1986-87)

BIO 355 Computer Programming and Modelling Techniques in Biology

An introduction for advanced biology, mathematics, and physics majors to assembly language and FORTRAN programming applications in ecology, population genetics, and taxonomy. Mathematical methods used in modelling of biological phenomena. Both analytical and simulation techniques will be emphasized.

Prerequisites: A year of calculus; either BIO 151, 152 or PHY 102 or 104
Fall, alternate years, 3 credits (not offered in 1985-86)

BIO 356 Marine Ecology Laboratory

Students will be introduced to laboratory techniques in marine ecology such as nutrient and elemental analysis of sediments and seawater; particle-size analysis; collecting techniques; epifluorescence microbial counting techniques; and data analysis. Individual projects will be encouraged after instrument instruction.

Prerequisites: BIO 343, 353; permission of instructor
Fall, 2 credits

BIO 357 General Microbial Ecology

An introduction to the study of the interaction of microorganisms with their natural or artificial environments. The course will include the historical development of microbial ecology, a review of microbial diversity and structure, ecological parameters, population interactions, applied microbial ecology, experimental design and data analysis, and ecosystem modelling as applied to microbial ecology.

Prerequisites: BIO 151, 152; CHE 132 or 142
Spring, 3 credits

BIO 358 Ecology and Human Affairs

An examination of the relationship of science and scientific theory, especially ecology, to the structure and organization of human affairs in general and to public policy and decision making on environmental affairs in particular.

Prerequisites: BIO 350 or 351

Spring, alternate years, 3 credits (not offered in 1986-87)

BIO 359 Animal Behavior

A consideration of observed patterns and underlying mechanisms of animal behavior in relation to ecological circumstances and evolutionary history, with examples mainly from the vertebrates.

Prerequisites: BIO 151, 152

Fall or spring, 3 credits

BIO 361, 362 Biochemistry I, II

Biochemistry I surveys the major chemical constituents of the cell, including carbohydrates, lipids, and proteins. Emphasis is on enzyme structure, enzyme kinetics, reaction mechanisms, and metabolic pathways. Biochemistry II treats nucleic acid structure, replication, and transcription, both *in vivo* and *in vitro*. The machinery of protein synthesis is also covered, including amino acid activation, transfer RNA, ribosomes, the genetic code, and the peptides chain initiation, elongation, and termination.

Prerequisites for BIO 361: BIO 152; CHE 322 or 332

Prerequisite for BIO 362: BIO 361

Fall (361) and spring (362), 3 credits each semester

BIO 365 Biochemistry Laboratory

A series of laboratory experiments and discussions designed particularly to complement BIO 361. Topics include isolation of cellular organelles, extraction and characterization of nucleic acids and enzymes, osmosis and permeability, and bioenergetics. Four hours of laboratory and discussion per week.

Pre- or corequisite: BIO 310 or 361

Fall, 2 credits

BIO 366 Crystal Structure of Macromolecules

The determination of the three-dimensional structures of biological macromolecules using the X-ray diffraction analysis of their single crystals.

Prerequisites: CHE 322 or 332; MAT 127 or 132 or 142; BIO 361 is recommended

Fall, 3 credits

BIO 374 Molecular and Cellular Neurobiology

The structure, function, and development of nerve, muscle, and glia will be presented at the molecular level. The cellular and molecular processes underlying neurotransmitters, their receptors and ion channels, neuromodulators, synaptogenesis, and axonal growth and transport will be described. Emphasis will be placed on relating various experimental model neurobiological systems to the mammalian nervous system.

Prerequisite: BIO 310 or 334 or 361

Spring, alternate years, 3 credits (not offered in 1986-87)

BIO 376 General Plant Physiology

The physiological patterns and integration of cellular processes that culminate in plant growth.

Prerequisites: BIO 151, 152; CHE 132

Fall, 3 credits

BIO 377 Biological Clocks

A consideration of the temporal dimension of biological organization and of periodic phenomena that are a basic property of living systems. Topics include a survey of circadian rhythms; influence of light, temperature, and chemicals; use of the clock for adjustment to diurnal, tidal, and lunar cycles for direction-finding (homing and orientation) and for day-length measurement (photo-periodism); chronopathology and chronopharmacology; aging and life cycle clocks; possible molecular mechanisms of the clock.

Prerequisites: CHE 321 or 331; at least one course in physiology; permission of instructor

Spring, 3 credits

BIO 379 Developmental Neurobiology

An introduction to the development of the nervous system. General areas to be discussed include neuroembryology, neuronal differentiation, synapse formation, neurotrophic interactions, and specificity and plasticity of neuronal connections.

Prerequisite: BIO 230

Spring, alternate years, 3 credits (not offered in 1985-86)

BIO 383 Marine Vertebrate Zoology

Ecology, systematics, and evolution of fishes, with consideration of special topics on marine representatives of other vertebrate groups. Field and laboratory work on local forms. Three hours of lecture and one three-hour laboratory per week.

Prerequisite: BIO 341 or 344

Spring, alternate years, 4 credits (not offered in 1985-86)

BIO 385 Ecology of Land Plants

Lectures and discussions on ecological phenomena and problems important to plants and plant communities, including such areas as physiological processes, competitive interactions, plant-animal interactions, and community dynamics.

Prerequisite: BIO 350 or 351

Fall, alternate years, 3 credits (not offered in 1985-86)

BIO 386 Plant Ecology Laboratory

Study of local flora, soils, ecological anatomy, herbivory, pollination, dispersal, and competition. One three-hour laboratory per week plus three intensive weekend field trips.

Prerequisite: Permission of instructor

Corequisite: BIO 385

Fall, alternate years, 2 credits (not offered in 1985-86)

BIO 401-405 Seminars in Biology

Discussions of a specific area of current interest in biology. The work of each semester covers a different area of biology. May be repeated as subject matter differs.

Prerequisite: Permission of instructor

Schedule to be announced, 2 credits

BIO 409 Current Research in Structure and Function of Proteins

A series of reports by members of the Department of Biochemistry on their current research on structural and functional aspects of proteins, including enzymes, structural proteins, and membrane proteins.

Prerequisite: BIO 361

Fall or spring, 2 credits

BIO 410 Current Research in Nucleic Acids and Molecular Genetics

A series of reports by members of the Department of Biochemistry on their current research on nucleic acids, protein synthesis, and molecular genetics.

Prerequisite: BIO 362

Fall or spring, 2 credits

BIO 420 Developmental Genetics

The genetic analysis of developmental events in higher organisms.

Prerequisites: BIO 220, 310; permission of instructor

Fall, 2 credits

BIO 445 Readings in Biological Education

Tutorial studies on recent advances in biological education. Not for major credit.

Prerequisite: Permission of Biology Teacher Preparation Program

Fall and spring, 1 credit

BIO 446-449 Readings in Biological Sciences

BIO 446 Readings in Neurobiology and Physiology

BIO 447 Readings in Genetics and Development

BIO 448 Readings in Biochemistry

BIO 449 Readings in Ecology and Evolution

Tutorial readings in the biological sciences. These courses may be repeated, but not more than two credits may be used toward the divisional major requirements. Limit of one topic per semester.

Prerequisites for BIO 446, 447, and 449:

Permission of instructor and Undergraduate Studies Committee.

Prerequisites for BIO 448: Permission of

instructor and Biochemistry Department

Fall and spring, 1 or 2 credits each semester

BIO 450 Supervised Teaching—Biology

Prospective biology teachers at the secondary school level receive extensive practice under selected cooperating teachers. Student teachers work with one or two certified biology teachers in one school each regular school day for the entire semester. Frequent consultations with University faculty members are designed to assist the student. Applications must be filed with the Biology Teacher Preparation Program one semester prior to student teaching. Not for major credit. Satisfactory/Unsatisfactory grading only.

Prerequisite: Senior standing

Corequisite: BIO 454

Fall and spring, 12 credits

BIO 454 Student Teaching Seminar

Seminar on problems encountered by student teachers and public school teachers at the secondary level. Study and analysis of the many aspects of the teaching profession, such as legal responsibilities, morality, and professional ethics.

Corequisite: BIO 450

Fall and spring, 3 credits

BIO 475 Teaching Practicum in College Biology I

Study of the literature, resources, and teaching strategies in a field of biology, coordinated with a supervised clinical experience in instruction. Not for major credit. Cannot be repeated for credit.

Satisfactory/Unsatisfactory grading only.

Prerequisites: Permission of instructor and

Undergraduate Studies Committee

Fall and spring, 2 or 3 credits

BIO 476 Undergraduate Teaching Practicum in College Biology II

This course continues, on a more advanced level, study of the literature, resources, and teaching strategies in a field of biology, coordinated with a supervised clinical experience in instruction. Students will assume greater responsibility in supervising laboratories, laboratory preparation, and recitation sections. Students may not serve as teaching assistants in the same course twice; the second course in which a student acts as a T.A. should be of at least equal difficulty with the course in which he or she

previously assisted. Satisfactory/Unsatisfactory grading only. Not for major credit.

Prerequisites: BIO 475; permission of instructor and Undergraduate Studies Committee

Fall and spring, 2 or 3 credits

BIO 486-489 Research in Biological Sciences

BIO 486 Research in Neurobiology and Physiology

BIO 487 Research in Genetics and Development

BIO 488 Research in Biochemistry

BIO 489 Research in Ecology and Evolution

In these courses the student will work under the supervision of a faculty member in developing an individual project that makes use of the knowledge and techniques acquired in previous courses. The student will prepare an appropriate report on the project. Any of the courses may be taken more than two semesters, but no more than eight credits may be used for divisional major requirements. Limit of one topic per semester. Request for approval of the Undergraduate Studies Committee must be submitted no later than two days prior to the last day of the add period as scheduled in the academic calendar.

Prerequisites for BIO 486, 487, and 489:

Written permission of instructor and

Undergraduate Studies Committee

Prerequisites for BIO 488: Written permission

of instructor and Biochemistry Department

Fall and spring, 1 to 4 credits each semester

Business

Minor Coordinator

Egon Neuberger; Economics

The business minor (BUS) is intended primarily for students who are preparing for careers in business and who are planning to do graduate work in

business administration or management. For those students, the minor complements their chosen major by introducing them to principles and techniques used in business and management.

Because graduate schools and employers in business prefer people with experience, students are encouraged to include a semester or summer internship (see page 54) in their undergraduate program.

The requirements for this minor are relatively extensive; they include specific advanced courses in economics, political science, and

sociology, and these courses have one or more prerequisites. Students are encouraged to plan the inclusion of this minor within their course selection early in their undergraduate career, especially those whose majors are in the natural sciences, engineering, and applied sciences.

Requirements for the Minor in Business

	<i>Credits</i>	
1. Either: AMS 102 Elements of Statistics or CSE 105 Introduction to Computer Science and Business Data Processing	3	5. ECO 348 Analysis for Managerial Decision Making
2. POL 261 Business Law	3	6. SOC 381 Sociology of Organizations
3. ECO 114 Financial Accounting	3	7. Either: EST 441 Business Policy: Formulation and Administration or an approved internship (see page 54)
4. ECO 251 Intermediate Microeconomic Theory	4	Total 23

No more than one of the above courses may be taken for Pass/No Credit.

Economics majors are required to take a minimum of 18 credits for the

minor, exclusive of courses offered toward their major. An approved list of courses from which economics majors may select to fulfill minor requirements is available. The list may interest all business minor students for selecting electives related to their career intentions.

Information and advising about careers in business, graduate study in business, and the business minor are available in the Office of Undergraduate Studies.

Department of Chemistry

University Professor

Paul C. Lauterbur, Ph.D., University of Pittsburgh: Nuclear magnetic resonance spectroscopy; image formation in biology and medicine.

Professors

John M. Alexander, Ph.D., Massachusetts Institute of Technology: Nuclear chemistry.

Jacob Bigeleisen, Ph.D., University of California, Berkeley: Chemistry of isotopes.

Francis T. Bonner, Ph.D., Yale University: Nitrogen and isotope chemistry.

Benjamin Chu, Chairperson, Ph.D., Cornell University: Light-scattering spectroscopy; X-ray scattering.

Harold L. Friedman, Ph.D., University of Chicago: Theory of equilibrium; dynamic properties of solutions.

Albert Haim, Ph.D., University of Southern California: Kinetics and mechanisms of inorganic reactions. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1980-81.

David M. Hanson, Ph.D., California Institute of Technology: Theoretical and experimental investigations of molecular crystals.

Paul M. Helquist, Ph.D., Cornell University: Organometallic chemistry in organic synthesis.

Patrick J. Herley, Ph.D., Rhodes College; Ph.D., Imperial College, London: Thermal decomposition; catalysis.

Takanobu Ishida, Ph.D., Massachusetts Institute of Technology: Chemistry of stable isotopes.

Francis Johnson, Ph.D., Glasgow University: Structure and total synthesis of naturally occurring biologically active molecules.

Philip M. Johnson, Ph.D., Cornell University: Optical molecular spectroscopy.

William J. le Noble, Ph.D., University of Chicago: Chemistry of highly compressed solutions.

Iwao Ojima, Ph.D., University of Tokyo: Synthetic, bioorganic and organometallic chemistry.

Yoshi Okaya, Ph.D., Osaka University: Crystallography; computer-controlled data acquisition.

Richard N. Porter, Ph.D., University of Illinois: Theoretical chemistry.

Glenn D. Prestwich, Ph.D., Stanford University: Bioorganic chemistry; chemical ecology.

Fausto Ramirez, Emeritus, Ph.D., University of Michigan: Organic synthesis; organic phosphorus compounds.

Stanley Seltzer, part-time, Ph.D., Harvard University: Elucidation of enzyme and organic reaction mechanisms.

George Stell, Ph.D., New York University: Molecular theory of the fluid state; ionic fluid structural properties; transport in multiphase systems.

Sei Sujishi, Ph.D., Purdue University: Organosilicon chemistry.

Jerry L. Whitten, Ph.D., Georgia Institute of Technology: Theoretical chemistry.

Associate Professors

Frank W. Fowler, Coordinator of Graduate Studies, Ph.D., University of Colorado: Synthesis and study of heterocyclic molecules.

Theodore D. Goldfarb, Ph.D., University of California, Berkeley: Vibrational spectroscopy. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1978-79.

Robert C. Kerber, Coordinator of Undergraduate Studies, Ph.D., Purdue University: Organo-transition metal complexes.

Stephen A. Koch, Ph.D., Massachusetts Institute of Technology: Bioinorganic chemistry.

Joseph W. Lauher, Ph.D., Northwestern University: Inorganic and organometallic synthesis and structure.

Robert F. Schneider, Ph.D., Columbia University: Nuclear quadrupole resonance.

Richard Solo, Adjunct, Ph.D., University of California, Berkeley: Gas phase kinetics.

Charles S. Springer, Ph.D., Ohio State University: Metal coordination chemistry; nuclear magnetic resonance in membranes.

David Waiser, Ph.D., University of Chicago: History of science.

Arnold Wishnia, Ph.D., New York University: Physical chemistry of proteins.

Assistant Professors

Scott L. Anderson, Ph.D., University of California, Berkeley: Chemical reaction dynamics.

H. Aaron Bates, Ph.D., University of California, Berkeley: Structure and synthesis of biologically active substances.

Thomas Bell, Ph.D., University College, London: Isolation and synthesis of insect pheromones; synthetic methods; synthesis and study of new cation complexing.

Cynthia J. Burrows, Ph.D., Cornell University: Organic coordination chemistry; biomimetic chemistry.

Lecturers

Carolyn B. Allen, Coordinator of General Chemistry Laboratories, Ph.D., Rensselaer Polytechnic Institute

Marjorie Kandel, Coordinator of Organic Chemistry Laboratories, M.S., Indiana University

Teaching Assistants

Estimated number: 45

The Bachelor of Science program in chemistry is designed to prepare the student for graduate study in chemistry or for industrial or other employment. The program of the Department of Chemistry is approved by the Committee on Professional Training of the American Chemical Society.

The Bachelor of Arts program allows more flexibility in the choice of electives. It is designed to accommodate the needs of premedical students and others whose career objectives may call for a substantial introduction to chemistry. It can also accommodate students who wish to obtain a strong undergraduate background in another science or mathematics while earning a degree in chemistry.

Students interested in combining the study of chemistry with the study of materials science should see also the Interdisciplinary Program in Engineering Chemistry.

Physical Facilities

Chemistry laboratory facilities consist of about 7,000 square feet of general chemistry laboratories in the Old Chemistry Building and over 11,000 square feet of advanced undergraduate

laboratories in the Chemistry Building. Students taking laboratory courses are issued lockers that contain the appropriate basic glassware and other apparatus; more specialized equipment and apparatus are issued for a laboratory period. All laboratories have conveniently located balance rooms or weighing areas; instructional stockrooms are located adjacent to the work areas. Equipment associated with (1) general chemistry laboratory (CHE 133, 134 and CHE 143, 144) includes analytical balances, pH meters, and visible spectrophotometers; (2) organic chemistry laboratory (CHE 327 and CHE 333, 334) includes gas chromatographs, infrared and ultraviolet spectrometers, and melting-point apparatus; and (3) physical chemistry laboratory (CHE 303, 304 and CHE 357) includes digital spectrophotometers, bomb calorimeter, oscilloscopes, digital electronic equipment, EPR, pulsed NMR, X-ray generator and cameras, spectrofluorimeter, atomic absorption spectrometer, and mass spectrometer.

Requirements for the Bachelor of Science Degree in Chemistry

All required courses must be taken for a letter grade. No transferred course with a grade lower than C- may be used to fulfill any major requirement.

A. Study within the Area of Chemistry	Credits
1. CHE 131, 132 or 141, 142 General or Honors Chemistry	8
2. CHE 133, 134 or 143, 144 General or Honors Chemistry Laboratory	2
3. CHE 301, 302 Physical Chemistry (or 312, 302 with permission of department)	6
4. CHE 303 Solution Chemistry Laboratory	2
5. CHE 304 Chemical Instrumentation Laboratory	2
6. CHE 321, 322 or 331, 332 Organic Chemistry	6
7. CHE 333, 334 Organic Chemistry Laboratory	4
8. CHE 357 Molecular Structure and Spectroscopy Laboratory	2

9. CHE 375 Inorganic Chemistry I	3
10. Any CHE lecture course numbered above 340, including graduate-level courses	3
Subtotal	38

Note: At least 12 credits of chemistry courses must be taken at Stony Brook; these must be taken in at least two of the major subdisciplines (inorganic, physical, and organic chemistry).

B. Courses in Related Fields

1. Four semesters of calculus: MAT 131, 132, 231, 306	14
2. Three semesters of physics: PHY 101, 102 or 103, 104; 251	12
Total	64

Note: The following alternate calculus sequences may be substituted in major requirements or prerequisites: MAT 141, 142 or 125, 126, 127 for 131, 132; MAT 241 for 231; MAT 307 for 306.

For those students who plan to pursue post-college studies in chemistry it is recommended that a reading knowledge be attained in German and in French or Russian.

Students who wish to meet the American Chemical Society certification requirements must take, in addition to the above requirements, two additional advanced chemistry courses. Experience in statistics and computer science is highly recommended by the ACS.

Requirements for the Bachelor of Arts Degree in Chemistry

All required courses must be taken for a letter grade. No transferred course with a grade lower than C- may be used to fulfill any major requirement.

A. Study within the Area of Chemistry	Credits
1. CHE 131, 132 or 141, 142 General or Honors Chemistry	8
2. CHE 133, 134 or 143, 144 General or Honors Chemistry Laboratory	2
3. CHE 301 or 312 Physical Chemistry I or Short Course	3

4. CHE 302 Physical Chemistry II	3
5. CHE 303 Solution Chemistry Laboratory, and one additional laboratory course (304, 334, or 357)	4
6. CHE 321, 322 or 331, 332 Organic Chemistry	6
7. CHE 327 or 333 Organic Chemistry Laboratory	2
8. CHE 375 Inorganic Chemistry I	3
Subtotal	31

Note: At least 12 credits of chemistry courses must be taken at Stony Brook; these must be taken in at least two of the major disciplines (inorganic, physical, and organic chemistry).

B. Courses in Related Fields	
1. Three semesters of calculus: MAT 131, 132, 231	11
2. Three semesters of physics: PHY 101, 102 or 103, 104; 251	12
Total	54

Note: The following alternate calculus sequences may be substituted in major requirements or prerequisites: MAT 125, 126, 127 or 141, 142 for 131, 132; MAT 241 for 231.

Honors Program in Chemistry

Students who have maintained a minimum cumulative grade point average of 3.0 in science and mathematics through the junior year are eligible for departmental honors in chemistry. An additional requirement for honors is the submission of a senior thesis based on research performed during the senior year. The student will be given an oral examination in May by his or her research supervisor and the undergraduate research committee. The awarding of honors requires the recommendation of this committee and is a recognition of superior performance in research and scholarly endeavors. The award is contingent on maintenance of a 3.4 cumulative grade point average in senior CHE courses.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

CHE 111 Elementary Chemistry I

An introduction to the concepts of chemical composition, structure, and reactions, illustrated with examples from the life sciences. Suitable for students preparing for undergraduate health professions, liberal arts students, and those lacking high school preparation for CHE 131. Not open to students who have completed high school chemistry, except by permission, nor to students who have completed any college chemistry course.

Fall, 3 credits

CHE 112 Elementary Chemistry II

A terminal course in fundamental organic and biological chemistry, appropriate for students preparing for undergraduate health professions such as nursing, physical therapy, and physician's assistant.

Prerequisite: CHE 111 or 131
Spring, 3 credits

CHE 131, 132 General Chemistry

A broad introduction to the fundamental principles of chemistry, including substantial illustrative material drawn from the chemistry of inorganic, organic, and biochemical systems. The principal topics covered are stoichiometry, the states of matter, chemical equilibrium and introductory thermodynamics, electrochemistry, chemical kinetics, electron structure and chemical bonding, and chemical periodicity. The course emphasizes basic concepts, problem solving, and factual material. It provides the necessary foundation for students who wish to pursue further coursework in chemistry. This course is inappropriate for students who have completed two or more years of chemistry in high school; such students should take CHE 141, 142. It is strongly recommended that General Chemistry Laboratory and mathematics be taken concurrently with CHE 131, 132. (Note that the laboratory courses are prerequisite to organic chemistry.) Three lecture hours and one discussion hour per week.

Prerequisite to CHE 131: High school chemistry or CHE 111

Prerequisite to CHE 132: CHE 131
Fall and spring (131); spring and summer (132), 4 credits each semester

CHE 133, 134 General Chemistry Laboratory

Designed to familiarize students with (1) some chemical and physical properties of substances, (2) techniques of quantitative chemistry, and (3) scientific methodology.

Four hours of laboratory and discussion per week.

Pre- or corequisite to CHE 133: CHE 131
Prerequisite to CHE 134: CHE 133
Pre- or corequisite to CHE 134: CHE 132
Fall and spring (133); spring and summer (134), 1 credit each semester

CHE 141, 142 Honors Chemistry

The topics covered in this course are similar to those in CHE 131, 132, but the course draws more on students' previous background in science and mathematics in order to present the material in a more quantitative manner. The students in CHE 141, 142 typically have good backgrounds in mathematics and science, especially chemistry and physics. It is strongly recommended that Honors Chemistry Laboratory be taken concurrently. Three lecture hours and one discussion hour per week.

Prerequisite to CHE 141: High school chemistry and precalculus
Corequisite to CHE 141: MAT 131 or 141
Prerequisite to CHE 142: CHE 141
Corequisite to CHE 142: MAT 132 or 142
Fall (141) and spring (142), 4 credits each semester

CHE 143, 144 Honors Chemistry Laboratory

Laboratory program similar in content to CHE 133, 134 but conducted at a more intensive and stimulating level. Four hours of laboratory and discussion per week.

Corequisite to CHE 143: CHE 141
Prerequisite to CHE 144: CHE 143
Corequisite to CHE 144: CHE 142
Fall (143) and spring (144), 1 credit each semester

CHE 301 Physical Chemistry I

Equations of state. The principles of thermodynamics and their application to chemical reactions, phase equilibria, ideal and nonideal solutions, and electrochemical systems. Transport properties.

Prerequisites: CHE 132 or 142; MAT 132 or 127
Corequisite: PHY 101 or 103
Fall, 3 credits

CHE 302 Physical Chemistry II

Introductory quantum mechanics, with applications to atomic and molecular systems. The Schrodinger equation will be solved for simple systems and the general theory applied in the discussion of chemical bonding, molecular structure, and spectroscopy. Statistical thermodynamics.

Prerequisites: CHE 301 or 312; MAT 231
Corequisite: PHY 102 or 104
Spring, 3 credits

CHE 303 Solution Chemistry Laboratory

Quantitative techniques of solution chemistry. Measurement: accuracy and precision, analysis, computation, and reporting. Spectrophotometry. Solution equilibria and kinetics. Use of computers will be introduced. Six hours of laboratory and discussion.

Prerequisite: CHE 134 or 144

Corequisite: CHE 301

Fall, 2 credits

CHE 304 Chemical Instrumentation Laboratory

Electrochemical and thermochemical measurements. Electronics in chemical instrumentation. Vacuum techniques. Electrical and magnetic properties of materials. Data-handling methods. Six hours of laboratory and discussion.

Prerequisites: CHE 303; knowledge of computer programming

Corequisite: CHE 302

Spring, 2 credits

CHE 310 Chemistry in Technology and the Environment

Use of chemical principles in understanding processes that occur in the modern technological world and in the natural environment. Certain ecological problems of a chemical nature are analyzed. Methods of controlling these problems are discussed.

Prerequisite: CHE 112 or 132 or 142

Fall or spring, 3 credits

CHE 312 Physical Chemistry (Short Course)

A one-semester treatment of fundamental concepts of physical chemistry, intended primarily for students of the biological sciences desiring an introduction to physical chemistry. Topics include equations of state; classical thermodynamics and its application to chemical equilibrium in reaction systems, multiphase systems, and electrochemical cells; kinetic theory of gases; transport properties; chemical kinetics. Cannot be taken for credit by students who have completed CHE 301.

Prerequisite: CHE 132 or 142

Pre- or corequisites: MAT 132 or 142; PHY 101 or 103

Spring, 3 credits

CHE 321, 322 Organic Chemistry

A systematic discussion of the structures, physical properties, and syntheses of carbon compounds, based on modern views of chemical bonding and mechanism. The chemistry of substances important in biology and technology, including macromolecules, will be emphasized.

Prerequisites to CHE 321: CHE 132 or 142; 134 or 144

Prerequisite to CHE 322: CHE 321

Fall and summer (321) and spring and summer (322), 3 credits each semester

CHE 327 Organic Chemistry Laboratory

Techniques of isolating and handling organic substances, including biological materials. A one-semester course that provides a basic organic laboratory experience. It is recommended that students take CHE 327 at the same time as or immediately following CHE 322 or 332. Safety considerations make it necessary to prohibit wearing contact lenses in these laboratories. Four laboratory hours and one lecture hour per week.

Prerequisites: CHE 134 or 144; 321 or 331

Fall and spring, 2 credits

CHE 331, 332 Honors Organic Chemistry

An organic chemistry course similar to CHE 321, 322 but providing a more fundamental view of organic compounds, reaction mechanisms, and synthesis, based somewhat more explicitly on thermodynamics and kinetics. Especially for those who may major in chemistry, biochemistry, or another physical science.

Prerequisites to CHE 331: CHE 132 or 142; 134 or 144

Prerequisite to CHE 332: CHE 331

Fall (331) and spring (332), 3 credits each semester

CHE 333, 334 Organic Chemistry Laboratory B

Fundamental laboratory techniques of organic chemistry, including methods of isolation, purification, and structure identification, with applications to synthetic, structural, and mechanistic problems. For students who will require substantial laboratory skills, such as those planning careers in research. Safety considerations make it necessary to prohibit wearing contact lenses in these laboratories.

Prerequisite: CHE 134 or 144

Corequisites: CHE 321, 322 or 331, 332

Prerequisite to CHE 334: CHE 333

Fall (333) and spring (334), 2 credits each semester

CHE 345 Intermediate Organic Chemistry

An extension of the material introduced in CHE 321, 322 or 331, 332. Electronic and stereochemical theories are utilized to discuss selected organic reactions, syntheses, and natural products.

Prerequisite: CHE 322 or 332

Fall or spring, 3 credits

CHE 347 Physical Chemistry of Metal-Gas and Metal-Liquid Interfaces

The behavior and chemical properties of solid-gas and solid-liquid interfaces. Adsorption and the specific factors influencing (a) heterogeneous catalysis on gas-solid interfaces, and (b) oxidation and

reduction processes at metal-liquid interfaces will be described. Examples will be drawn from industrial processes to describe these effects. May not be taken for credit in addition to the discontinued CHE/ESM 346 or 348. Crosslisted with ESM 347.

Prerequisites: CHE 302; PHY 102

Spring, 3 credits

CHE 355 Physical Chemistry III

Kinetic theory of gases. Molecular and electrochemical transport phenomena. Molecular theories of chemical kinetics. Introductory statistical mechanics. Partition functions and spectroscopic determination of thermodynamic quantities.

Prerequisites: CHE 302; MAT 231 or 241;

PHY 102 or 104

Fall, 3 credits

CHE 357 Molecular Structure and Spectroscopy Laboratory

Spectroscopic study of molecular properties. Magnetic resonance and optical spectra. X-ray crystallography, mass spectrometry. Six hours of laboratory and discussion.

Prerequisite: CHE 304

Fall, 2 credits

CHE 365 Chemical Ecology

The organic chemistry and biochemistry underlying the interactions of plants and insects with each other and with their environment. Topics include: plant-herbivore relationships; chemical defense; pheromonal communication; orientation and perception mechanisms; biosynthesis and release of chemicals; adaptive significance of chemical systems; plant and insect hormones; agrochemical products and the environment.

Prerequisites: CHE 322; BIO 151, 152; BIO 350 or 351 recommended

Fall, 3 credits

CHE 375 Inorganic Chemistry I

A survey of inorganic chemistry covering various classes of inorganic compounds and reactions with emphasis on the structural aspects. Wherever possible, the subject is treated on the basis of modern concepts of chemical bonding. Thermodynamic and kinetic aspects of inorganic reactions are included.

Prerequisites: CHE 302; 321 or 331

Fall, 3 credits

CHE 376 Inorganic Chemistry II

The chemistry of the elements with an emphasis on the transition metals. Reaction mechanisms, synthesis, and structure will be covered. Specific areas of concern will include coordination chemistry, organometallic chemistry, bioinorganic chemistry, and selected topics from solid-state and non-transition metal chemistry.

Prerequisite: CHE 375

Spring, 3 credits

CHE 461 Selected Topics in Chemistry

Topics of current interest in the chemical sciences. Topics will be announced in the *Undergraduate Bulletin Supplement* prior to the beginning of the semester in which the course is offered. May be repeated as the subject matter differs.

Prerequisites: Varying with topic
Fall or spring, 3 credits

CHE 475 Undergraduate Teaching Practicum I

An opportunity for selected upper-division students to collaborate with the faculty in teaching. In addition to working as tutors or laboratory assistants, students will meet at least weekly with their faculty supervisors to discuss teaching strategies and problems encountered. Students may participate only in courses in which they have excelled. Satisfactory/Unsatisfactory grading only.

Prerequisite: Permission of department
Fall and spring, 3 credits

CHE 476 Undergraduate Teaching Practicum II

The continuation of training in the teaching of chemistry courses. Students may participate only in courses in which they have excelled. Either increased or different responsibilities will be assigned, adding to the quality of academic experience already gained in CHE 475. Students may offer only two teaching practica for credit. Satisfactory/Unsatisfactory grading only.

Prerequisites: CHE 475; permission of department
Fall and spring, 3 credits

CHE 487 Tutorial in Special Topics in Chemistry

Supervised readings, laboratory work, or both, on specialized topics in chemistry. For students who wish to gain familiarity with a subject or area not included in sufficient depth in other undergraduate courses.

Departmental permission to register will be based on a brief outline jointly submitted by the student and faculty supervisor. A final report will be submitted by the student. May be repeated for credit.

Prerequisites: Permission of instructor and department
Fall and spring, 1 to 3 credits each semester

CHE 488 Internship

Research participation in off-campus laboratories. Students will be required to submit to the department a proposal at the time of registration and a research report at the end of the semester. May be repeated up to a limit of twelve credits.

Prerequisites: CHE 334; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 6 credits

CHE 491-492 Senior Research

A two-semester research program to be carried out under the supervision of a staff member. The results of this work are to be submitted to the department in the form of a senior research report. The student will be given an oral examination in May by a faculty committee consisting of the student's supervisor and three other faculty members.

A composite grade for the two semesters will be assigned.

Prerequisites: Senior standing; permission of instructor and department
Fall and spring, 3 credits each semester

Graduate Courses

Advanced chemistry students may elect 500- and 600-level graduate courses in aspects of chemistry of particular interest to them. The requirement for registration is a 3.0 average in CHE courses or permission of the instructor. See the *Graduate Bulletin* for course descriptions.

- CHE 501 Structural Organic Chemistry
- CHE 502 Mechanistic Organic Chemistry
- CHE 503 Synthetic Organic Chemistry
- CHE 511 Structural Inorganic Chemistry
- CHE 514 Transition Metal Chemistry
- CHE 515 Advanced Inorganic Chemistry
- CHE 521 Quantum Chemistry I
- CHE 522 Quantum Chemistry II
- CHE 523 Chemical Thermodynamics
- CHE 528 Statistical Mechanics
- CHE 529 Nuclear Chemistry
- CHE 530 Physical Chemistry of Macromolecules
- CHE 604 Molecular Biochemistry
- CHE 623 Molecular Spectroscopy
- CHE 624 Magnetic Resonance
- CHE 625 Molecular Structure and Crystallography
- CHE 626 Computer-Controlled Experimentation in Chemistry

Child and Family Studies

Minor Coordinator

David Lichtenstein: Social Sciences
Interdisciplinary

Requirements for the Minor in Child and Family Studies

The child and family studies minor (CFS) combines coursework in child

development and the family with practical, directed work in one of the campus child care centers. Courses in social sciences and psychology, work in a child care center, and a senior seminar are all combined to give students in the minor experience in a variety of disciplines and in modes of instruction and directed work in the field of applied child development.

A. Study in Social Sciences	<i>Credits</i>
1. SSI 103 Childhood: Social and Historical Perspectives	3
2. SSI 281 and SSI 283: Seminar and Practicum in Child Development	6
B. Related Courses	
To be chosen from the list below. Some courses must be chosen from at least two departments other than SSI. At least 9 of the 15 credits must be from upper-division courses	
	15
Total	24

Note: No more than one course may be taken for Pass/No Credit. No more than nine credits of independent work may be used toward fulfillment of the minor requirements.

AFS 251 Education of the Afro-American in America
 AFS 370 The Black Family
 ANT 352 Personality and Culture
 ANT 354 Family and Kinship
 ANT 356 Urban Anthropology
 ANT 367 Male and Female
 EGL 396 Literature and Psychology of Adolescence

LIN 320 Psycholinguistics
 LIN 375 Introduction to the Methods of Teaching English as a Second Language
 PSY 209 Social Psychology
 PSY 211 Developmental Psychology
 PSY 311 Topics in Advanced Developmental Psychology
 PSY 312 Behavior Deviation in Children
 PSY 317 Behavior Influence and Planned Environments
 SOC 204 Courtship and Marriage
 SOC 243 Sociology of Youth
 SOC 247 Women and Men
 SOC 304 Sociology of the Family

SOC 308 Social Welfare: Policies and Programs
 SOC 380 Social Psychology
 SOC 387 Sociology of Education
 SSI 339 Children's Play
 SSI 405 Seminar in Children and Social Policy
 SSI 417 Senior Seminar in Child Care

Note: SSI 447 Directed Readings in Social Science, SSI 487 Independent Project in the Social Sciences, and up to six credits of SSI 488 Internship may also be accepted if the topics concern child and family studies.

Classics and Classical Languages

Professors

Harvey Gross, Director, Ph.D., University of Michigan: Comparative literature.

Richmond Y. Hathorn, Ph.D., Columbia University: Myth; classical drama; classical languages.

Assistant Professor

Krin Gabbard, Ph.D., Indiana University: Comparative literature; Greek literature.

Lecturers

Joan B. Fry, Adjunct, M.A., University of California, Berkeley: Classical literature; archaeology.

Aaron W. Godfrey, Minor Coordinator, M.A., Hunter College: Latin; medieval studies.

Affiliated Faculty

Walter Watson: Philosophy

Victorino Tejera: Philosophy

Teaching Assistants

Estimated number: 2

Minor in Classical Civilization

The minor in classical civilization provides students with a broad

knowledge of the cultures of ancient Greece and Rome. After elementary literary surveys, the student completes at least two semesters of either Latin or Greek and selects a mixture of courses with classical content from offerings in classics, classical languages, and related courses from other departments. The student must fulfill the following minimum requirements by selecting at least two courses from group IA or IB, and one course each from groups II through VI, including nine credits numbered 300 or above. Substitutions may be permitted for other courses with classical content with permission of the minor coordinator. No more than one of the courses required for the minor may be taken for Pass/No Credit.

	Credits
Group IA: GRK 111, 112, 251, 252, 447	6
Group IB: LAT 111, 112, 353, 354, 355, 356, 447	3
Group II: CLS/CLT 113	3
Group III: CLS 215, EGL 260	3
Group IV: CLS 120, ARH 300, ARH 301	3
Group V: HIS 100, 230, 231, 232, 300, HIS/JDS 225	3
Group VI: PHI 200, 300	3

Total 21

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Classics

CLS 113 Greek and Latin Literature in Translation

Historical and analytical study of the development of classical Greek and Latin literature. Extensive readings in translation will include works illustrating epic, lyric, drama, history, oration, and literary criticism. Crosslisted with CLT 113.
 Fall, 3 credits

CLS 120 Classical Archaeology

Introduction to archaeology describing the range and variety of artifacts that can be used as evidence for recovering and reconstructing the civilizations of Greece and Rome, including the history of methods used to infer information from the artifacts. Emphasis will be on particular facts of daily life rather than an overview of high culture.
 Spring, 3 credits

CLS 215 Classical Mythology

A study of the Greek myths, classified according to the basic mythic patterns of Death and Rebirth and the Sacred Marriage; the influence of these myths on literature, art, and the history of ideas.
 Prerequisite: One course in literature
 Fall and spring, 3 credits

CLS 311 Classical Drama and Its Influence

A study of the Greco-Roman theatre, dramatic festivals, and play production. Readings in English translation of most of the extant tragedies, comedies, and satyr plays, with consideration of their meaning and influence in European culture.
 Spring, alternate years, 3 credits (not offered in 1985-86)

CLS 313 The Classical Tradition

A study, through analysis of Greek and Roman literature, of the basic ideas that distinguish the classical worldview from the romantic-modern worldview: reverence for tradition; the idea of high style; the tragic vision; the ethical approach to history and to the arts and sciences.
Fall, alternate years, 3 credits (not offered in 1986-87)

CLS 447 Directed Readings in Classics

Intensive study of a particular author, period, or genre of Greek and Latin literature in translation under close faculty supervision. May be repeated.
Prerequisite: Permission of Director
Fall and spring, 1 to 4 credits

Greek**GRK 111, 112 Elementary Greek**

An introduction to the Greek language, including the study of grammar, with reading and writing.
Prerequisite: Permission of instructor
Fall (111) and spring (112), 3 credits each semester

GRK 251, 252 Readings in Greek Literature

The reading and interpretation of works such as the *Apology* of Plato, the *Prometheus Bound* of Aeschylus, or selections from the New Testament.
Prerequisite: GRK 112
Fall (251) and spring (252), 3 credits each semester

GRK 447 Directed Readings in Greek

Intensive study of a particular author, period, or genre of Greek literature in the original under close faculty supervision. May be repeated.
Prerequisite: Permission of Director
Fall and spring, 1 to 4 credits

Latin**LAT 111, 112 Elementary Latin**

This intensive course is designed to prepare the beginning student to translate Latin that may be needed for use in undergraduate or graduate study. Focus of the course is on the fundamentals of grammar and techniques of translation. No student who has had two or more years of Latin in high school or who has otherwise acquired an equivalent proficiency will be permitted to enroll in LAT 111 without written permission from the course supervisor.
Fall (111) and spring (112), 3 credits each semester

LAT 251 Readings in Latin Literature

Readings in classical Latin literature of the Republic. The course will include a brief intensive review of grammar and the sampling of a number of authors including Catullus, Cicero, Virgil, and Livy.
Prerequisite: LAT 112
Fall or spring, 3 credits

LAT 353 Literature of the Roman Republic

Selected works of Plautus, Terence, Cicero, Lucretius, and Catullus will be translated and examined in their social and historical context. The reading of critical works in English will also be required.
Prerequisite: Permission of instructor
Fall, alternate years, 3 credits (not offered in 1985-86)

LAT 354 Literature of the Roman Empire

Selected works of Virgil, Horace, Livy, Petronius, Martial, Tacitus, and Juvenal will be translated and examined in their social and historical context. The reading of critical works in English will also be required.
Prerequisite: Permission of instructor
Spring, alternate years, 3 credits (not offered in 1985-86)

LAT 355 Early Medieval Latin

Translation and discussion of Christian and secular Latin literature from the 4th to the 12th century. The course will include an intense review of Latin grammar and an outline of the changes in the language that took place during early medieval times. Selections from the Vulgate and the writings of Jerome, Augustine, and Bede will be read.
Prerequisite: Permission of instructor
Fall, alternate years, 3 credits (not offered in 1986-87)

LAT 356 Late Medieval Latin

Translation and discussion of Latin literature from the 12th to the 16th century. Authors will include The Archpoet, Thomas Aquinas, Petrarch, Erasmus, and Thomas More.
Prerequisite: Permission of instructor
Spring, alternate years, 3 credits (not offered in 1986-87)

LAT 447 Directed Readings in Latin

Intensive study of a particular author, period, or genre of Latin literature in the original under close faculty supervision.
Prerequisite: Permission of Director
Fall and spring, 1 to 4 credits

Interdisciplinary Program in Comparative Literature

Professors

Harvey Gross, Director, Ph.D., University of Michigan: Prosody and poetic theory; modern intellectual history.

Richmond Hathorn, Ph.D., Columbia University: Classical literature; myth; Classical drama.

Jan Kott, Emeritus, Ph.D., Lodz University: Shakespeare; the drama; literary criticism.

Louise O. Vasvari, Ph.D., University of California, Berkeley: Medieval Spanish literature; Romance philology; linguistics; translation theory. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1975-76.

Assistant Professors

Krin Gabbard, Ph.D., Indiana University: The arts and their interrelations; film; drama.

Carrol Lasker, part-time, Director of Undergraduate Studies, Ph.D., State University of New York at Stony Brook: African and Third World literatures.

Lecturers

Joan B. Fry, Adjunct, M.A., University of California, Berkeley: Classical literature; archaeology.

Aaron W. Godfrey, M.A., Hunter College: Latin, medieval studies.

Affiliated Faculty*Könrad Bieber*, French*Roman de la Campa*, Spanish*Donald K. Fry*, English*Thomas A. Kerth*, German*Ruth Miller*, English*D. Sandy Petrey*, French*Mary C. Rawlinson*, Philosophy*Elias Rivers*, Spanish*Charles Rosen*, Music*Hugh J. Silverman*, Philosophy. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976-77*Louis Simpson*, English*Leif Sjöberg*, Scandinavian*Victorino Tejera*, Philosophy*Eleonore Zimmermann*, French**Teaching Assistants**

Estimated number: 1

The Interdisciplinary Program in Comparative Literature offers two options to undergraduate majors: the first, Option A, is a broadly based program for the student interested in comparative studies and general literature; the second, Option B, is intended for the student planning to undertake graduate studies in comparative literature or foreign languages. Both options stress the comparative study of national literatures; both stress the relationship between literature and other disciplines. Individual programs can be adjusted to the special interests of the student through consultation with the program's advisor.

Requirements for the Major in Comparative Literature

The interdisciplinary major in comparative literature leads to the Bachelor of Arts degree. The following courses are required and must be taken for a letter grade.

Option AA. Introductory course:
CLT 108

Credits

3

B. CLT 120 or any literary course with a strong non-Western component as approved in advance by the Director of Undergraduate Studies

3

C. Literature in the original language: Two semester courses in the literature of a language other than English

6

D. Period courses: Three courses selected from CLT 113, 202, 211, 212. Similar courses in other literature departments may be substituted with permission of the Director of the Program or the Director of Undergraduate Studies.

9

E. Theory: CLT 301

3

F. Seven courses selected from the following with at least one course in each category of Genre, Theme, and Interdisciplinary:

21

Genre—CLT 331, 332, 333, 334

Theme—CLT 351, 352

Interdisciplinary—CLT 361, 362, 363

CLT 487 Senior Project—
if eligibleCLT 495 Honors Project—
if eligible

Total 45

Option B

Credits

A. Introductory course:
CLT 108

3

B. CLT 120 or any literary course with a strong non-Western component as approved in advance by the Director of Undergraduate Studies

3

C. Literature in the original language:

1. Two semester courses in the literature of a language other than English

6

2. Two semester courses at any level in an additional language other than English

6

D. Period courses: Three courses selected from CLT 113, 202, 211, 212. Similar courses in other literature departments may be substituted with permission of the Director of the Program or Director of Undergraduate Studies.

9

E. Theory: CLT 301

3

F. Six courses selected from the following with at least two of the first three categories represented:

18

Genre—CLT 331, 332, 333, 334

Theme—CLT 351, 352

Interdisciplinary—CLT 361, 362, 363

CLT 487 Senior Project—
if eligibleCLT 495 Honors Project—
if eligible

Total 45

All upper-division courses offered to fulfill major requirements must be passed with a grade of C or higher.

Recommended Courses

The student majoring in comparative literature is advised to take the following courses:

A. CLT 201 The Study of Literature or EGL 204 Literary Analysis and Argumentation

B. Courses in linguistics and in the history and development of language, such as LIN 363 Language and Culture; EGL 207 The English Language; GER 338 History of the German Language, etc.

C. Courses in classics, plus the history, arts, and philosophy of the period or languages of the student's principal interests.

D. Students may earn credit toward the major through SUNY-sponsored foreign study programs at universities in all parts of the world.

Honors Program in Comparative Literature

Comparative literature majors who have maintained a grade point average of 3.5 in the major and 3.0 overall through their junior year may attempt the degree in comparative literature with honors.

The honors program requires an additional three credits above the 45 required for the major. These three additional credits will be earned in a special research project pursued in the final semester of the senior year. The project involves the completion of a senior thesis.

Students who are eligible for the honors program must find a full-time or affiliated member of the Comparative Literature faculty to act as thesis advisor. The student, with the approval of the supervising faculty member, must submit a proposal of the project in writing to the program by the last day of classes of the first semester of the senior year. Students who have obtained permission from the program to pursue the project must enroll in CLT 495 while writing the thesis.

The thesis will be evaluated by the thesis advisor, another member of the Comparative Literature faculty, and a third reader from outside the program.

For further information consult the Director of Undergraduate Studies.

Requirements for the Minor in Comparative Literature

The minor in comparative literature, designed especially to interest students majoring in foreign languages, English, and the humanities, provides a comprehensive overview of the theory and techniques of comparative literature, culminating in a practical course in which the student applies comparative techniques to his or her major field of study.

A. Introductory course: CLT 108	Credits 3
B. CLT 120 or any literary course with a strong non-Western component as approved in advance by the Director of Undergraduate Studies	3
C. Period courses: Two courses selected from CLT 113, 202, 211, 212. Similar courses in other literature departments may be substituted with permission of the Director of the Program or the Director of Undergraduate Studies.	6

D. Language: One course in the literature of a language other than English	3
E. Theory: CLT 301	3
F. One Genre or Themes course selected from the following: CLT 331, 332, 333, 334 or CLT 351, 352	3
G. Interdisciplinary course: One course selected from CLT 361, 362, 363	3
Total	24

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

CLT 108 Masterpieces of Imaginative Literature

Readings in the major texts of Western literature that are essential to further literary study. Selected works from such authors as Homer, Virgil, Dante, Shakespeare, Cervantes, Moliere, Goethe, Ibsen, Dostoevsky, Mann, and Beckett will be approached from a comparative perspective. *Fall or spring, 3 credits*

CLT 113 Greek and Latin Literature in Translation

Historical and analytical study of the development of classical Greek and Latin literature. Extensive readings in translation will include works illustrating epic, lyric, drama, history, oration, and literary criticism. This course is identical with CLS 113. *Fall, 3 credits*

CLT 120 Masterpieces of Non-Western Literature

A survey of the major themes and forms of non-Western literature, such as Oriental, Indian, African. Topics will vary. May be repeated. *Fall and spring, 3 credits*

CLT 201 The Study of Literature

An introduction to the most important methods of studying the literatures of the world when they are conceived of as a single phenomenon. Important literary and critical texts will be read in terms of theme, genre, history, influence, imitation, and other considerations that are crucial to the discipline of comparative literature. *Prerequisite: One course in literature. Spring, alternate years, 3 credits (not offered in 1986-87)*

CLT 202 Literary Period: The Scriptural and Classical Tradition

Readings in scriptural, cultural, and some continental medieval literature essential for the study of later British and American literature. All readings are in English translation. Crosslisted with EGL 272. *Alternate years, 3 credits (not offered in 1986-87)*

CLT 211 Literary Survey: Medieval through Late Renaissance

Historical and analytical study of representative works illustrating medieval epic, romance, and lyric. The beginnings of humanism through the late Renaissance. *Prerequisite: One course in literature. Fall, alternate years, 3 credits (not offered in 1985-86)*

CLT 212 Literary Survey: Enlightenment through Modern

Historical and analytical study of literature from the late 17th century, the neoclassic era, the romantic revolution, the 19th century (realism, naturalism, symbolism), leading to the culmination of modernism. *Prerequisite: One course in literature. Spring, alternate years, 3 credits (not offered in 1986-87)*

CLT 266 The Modern Novel

A study of major works and developments in the modern novel. Crosslisted with EGL 266. *Prerequisite: EGC 101 or "Strong" on English Placement Examination. Fall or spring, 3 credits*

CLT 301 Theory of Literature

An introduction to the different modes of analyzing literature by periods, ideas, traditions, genres, and aesthetic theories. Stress will be placed on classical theory and on developments in the 20th century. *Prerequisites: Two courses in comparative literature. Alternate years, 3 credits (not offered in 1986-87)*

Genre, Theme, and Interdisciplinary Courses

Detailed information on the content of CLT 331-363 is published by the Comparative Literature Program before registration each semester. Reading lists are also available in advance. These courses may be repeated once only as the subject matter differs.

CLT 331 Literary Genres: Poetry

Analysis of poetic form as illustrated by various kinds of poetry, e.g., epic, lyric. Works selected from different national literatures and literary movements. *Prerequisites: Two courses in literature. Schedule to be announced, 3 credits*

CLT 332 Literary Genres: Drama

Analysis of dramatic form through readings of major works in tragedy and comedy. Works selected from different national literatures and literary movements.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 333 Literary Genres: Novel

Historical and analytical study of the novel form. Works selected from different national literatures and literary movements.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 334 Other Literary Genres

Historical and analytical study of such literary genres as satire, fable, romance, epistle, saga, allegory, etc.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 351 Attitudes in Western Literature

Comparative analysis of attitudes in literature toward such subjects as love, marriage, women, death, etc. Works selected from different national literatures and literary movements.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 352 Mythical Themes and Archetypal Characters

Comparative analysis of the literary treatment of mythical themes and archetypal characters, e.g., Prometheus, Ulysses, Faust, Don Juan, etc.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 361 Literature and Society

An inquiry, interdisciplinary in nature, into the relationship between the events and

materials of political and social history and their effect on the form and content of the literature of a period. Also subsumed under the rubric Literature and Society is the topic Literature and Psychology.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 362 Literature and Ideas

An inquiry into the primary writings and significant documents in the history of ideas and their effect on the form and content of the literature of a period.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 363 Literature and the Arts

An inquiry into the aesthetic milieu (including the plastic arts, theatre, and music) and its relationship to the form and content of the literature of a period.
Prerequisites: Two courses in literature
Schedule to be announced, 3 credits

CLT 475 Undergraduate Teaching Practicum I

Each student will receive regularly scheduled supervision from the instructor of the course specified as the forum for the practicum. Responsibilities will include regular attendance in the specified course and may include conducting practice or discussion sessions that will supplement the regular class meeting, preparing material for practice or discussion, initial correction of homework

and tests, and helping students with course problems. Satisfactory/Unsatisfactory grading only.

Prerequisites: Senior standing; permission of instructor and Program Director
Fall and spring, 3 credits

CLT 476 Undergraduate Teaching Practicum II

The continuation of training in CLT 475. Students may participate only in courses in which they have excelled. Either increased or different responsibilities will be assigned, adding to the quality of academic experience already gained in CLT 475. Satisfactory/Unsatisfactory grading only.

Prerequisites: CLT 475; permission of instructor and Program Director
Fall and spring, 3 credits

CLT 487 Independent Reading and Research

Intensive reading and research on a special topic undertaken with close faculty supervision. May be repeated.

Prerequisites: Permission of instructor and program
Fall and spring, 3 credits

CLT 495 Comparative Literature Honors Project

A one-semester project for comparative literature majors who are candidates for the degree with honors. Arranged during the first semester of the senior year, to begin the following semester, the project involves independent study and the writing of a senior thesis under close supervision of an appropriate faculty member.

Prerequisites: Permission of instructor and program
Fall and spring, 3 credits

Department of Earth and Space Sciences

Professors

Peter W. Bretsky, Director of Undergraduate Studies, Ph.D., Yale University: Paleontology.

Robert T. Dodd, Jr., Ph.D., Princeton University: Geochemistry.

Gilbert N. Hanson, Chairperson, Ph.D., University of Minnesota: Geochemistry.

Roger F. Knacke, Ph.D., University of California, Berkeley: Astronomy.

Robert C. Liebermann, Ph.D., Columbia University: Geophysics.

Donald H. Lindsley, Ph.D., The Johns Hopkins University: Geochemistry.

Tobias C. Owen, Ph.D., University of Arizona: Planetary science.

Charles T. Prewitt, Ph.D., Massachusetts Institute of Technology: Geochemistry.

Michal Simon, Ph.D., Cornell University: Astronomy.

Philip M. Solomon, Ph.D., University of Wisconsin: Astronomy.

Donald J. Weidner, Ph.D., Massachusetts Institute of Technology: Geophysics.

Amos Yahil, Ph.D., California Institute of Technology: Astronomy.

Associate Professors

- John J. Caldwell*, Ph.D., University of Wisconsin: Astronomy.
- Miriam A. Forman*, Adjunct, Ph.D., State University of New York at Stony Brook: Astronomy.
- Johannes Hardorp*, Ph.D., University of Hamburg: Astronomy.
- James M. Lattimer*, Ph.D., University of Texas at Austin: Astronomy.
- William J. Meyers*, Director of Graduate Studies, Ph.D., Rice University: Sedimentology.
- Deane M. Peterson*, Ph.D., Harvard University: Astronomy.
- Richard J. Reeder*, Ph.D., University of California, Berkeley: Geochemistry; sedimentology.

Assistant Professors

- Steven R. Bohlen*, Ph.D., University of Michigan: Geochemistry.
- Henry J. Bokuniewicz*, Ph.D., Yale University: Marine geophysics.
- Karen R. Cercone*, Ph.D., University of Michigan: Carbonate petrology.
- Robert P. Comer*, Ph.D., Massachusetts Institute of Technology: Geophysics.
- Warren D. Sharp*, Ph.D., University of California, Berkeley: Geochemistry.
- Clifford H. Thurber*, Ph.D., Massachusetts Institute of Technology: Geophysics.
- Teng-fong Wong*, Ph.D., Massachusetts Institute of Technology: Geophysics.

Curator

Steven C. Englebright, M.S., State University of New York at Stony Brook: Geology.

Teaching Assistants

Estimated number: 24

The Department of Earth and Space Sciences offers undergraduate programs leading either to a Bachelor of Science or to a Bachelor of Arts degree. The B.S. programs in geology (GEO), astronomy/planetary sciences (AST), and atmospheric sciences/ meteorology (ATM) aim at giving the student maximum preparation to carry out graduate work in each of these fields.

The B.A. program (ESS) is more flexible in that it is designed to meet the needs of students who desire a more diverse liberal arts and sciences background. The various programs are designed to allow students to choose careers in teaching, law, or research in private industry and government.

Minimum course requirements for both the B.S. and B.A. programs are listed below. Upon declaring a major, the student will be assigned a faculty advisor in the appropriate area who, along with the Director of Undergraduate Studies, will assist in the selection of a course sequence leading to the desired degree. Students should consult frequently with their faculty advisors regarding their progress and regarding appropriate science courses. Because the position of the scientist in society is responsible and complex, the student is cautioned to pay careful attention to general education in the arts, humanities, and social sciences.

Physical Facilities

The following facilities may be used by undergraduates either directly with coursework or in senior research projects:

Laboratories

- Physical Geology*—Rock collections, maps
- Historical Geology*—Fossil and rock collections
- Mineralogy*—Crystal models and suites of mineral samples
- Paleontology*—Fossil collections
- Optical Mineralogy*—Polarizing microscopes
- Petrology*—Igneous and metamorphic rock suites; thin sections
- Structural geology*—Rock collections
- Sedimentology*—Rock collections
- Crystallography*—X-ray generators, diffractometers
- Spectroscopy*—Visible and IR spectrometers, gas cells

General Use

- Computer terminals
- Microcomputers
- Twelve-inch reflecting telescope
- Museum of Long Island Natural Sciences

Requirements for the Bachelor of Science Degree

All courses taken to meet requirements for the geology, astronomy/planetary sciences, and atmospheric sciences/ meteorology majors must be taken for a letter grade. In addition, a 2.0 G.P.A. in all upper-division courses used to meet the requirements must be achieved.

I. Geology Major

	<i>Credits</i>
A. Required departmental courses	
GEO 122 Physical Geology	4
GEO 226 Historical Geology	4
GEO 303 Stratigraphy	4
GEO 305 Field Geology	3
GEO 306 Petrology	4
GEO 307 Petrology Laboratory	1
GEO 309 Structural Geology	4
GEO 310 Introduction to Geophysics	3
GEO 312 Mineralogy	4
B. In addition to the courses listed above, at least six credits are required from any 300-level or higher GEO, AST, ATM, CHE, MAT, or PHY course from a current list of approved related sciences courses available from the department's Director of Undergraduate Studies. These must be in addition to the related sciences courses required under C and D.	
	6
C. Required courses in the related sciences:	
MAT 131, 132 or 141, 142 (MAT 125, 126, 127, 9 credits, may be substituted)	8
CHE 131, 132 or 141, 142	8
PHY 101, 102 or 103, 104	8
D. In addition to the courses listed under C above, one of the following sets of courses must be successfully completed:	
1. MAT 221 or 231 or 241 and MAT 306 or 307	(6)
2. CHE 301 and 302	(6)
3. Two of the following BIO courses: BIO 220, 343, 344, 350, 353, or 354	(6-8)
Total	67-69

Geological Oceanography

Students interested in geological oceanography should fulfill item 3 of section D, above. In the senior year, qualified students may enroll in approved graduate courses at the Marine Sciences Research Center (MSRC) and subsequently may be considered for admittance to the accelerated master's program at the MSRC. Interested students must consult with the department's Director of Undergraduate Studies regarding the sequence of courses.

II. Astronomy/Planetary Sciences

Major (AST)

	<i>Credits</i>
A. Required departmental courses:	
GEO 102 The Earth	3
AST 203 Astronomy	4
AST 341, 342 Astrophysics I, II	6
At least 3 credits from additional AST or ATM courses numbered 200 or higher	3
B. Required physics courses:	
PHY 101, 102	8
PHY 251	4
PHY 252	4
At least 12 credits from approved PHY courses numbered 300 or higher	12
C. Required mathematics courses:	
MAT 131, 132 or 141, 142 (MAT 125, 126, 127, 9 credits, may be substituted)	8
MAT 221 or 231 or 241	3
MAT 306 or 307	3
Total	58

III. Atmospheric Sciences/Meteorology

Major (ATM)

	<i>Credits</i>
A. Required departmental courses:	
GEO 122 Physical Geology	4
ATM 205 Introduction to Atmospheric Sciences	3
ATM 343 Planetary Atmospheres	3
B. Required atmospheric sciences/engineering courses:	
ATM/ESC 345 Theoretical Meteorology	3
ATM/ESC 346 Dynamic Meteorology	3
ATM/ESC 348 Elements of Atmospheric Sciences	3
ATM/ESC 397 Air Pollution and Its Control	3

C. Required courses in related sciences:

MAT 131, 132 or 141, 142 (MAT 125, 126, 127, 9 credits, may be substituted)	8
MAT 221 or 231 or 241	3
MAT 306 or 307	3
CHE 131, 132 or 141, 142	8
PHY 101, 102	8
PHY 251	4
PHY 252	4
PHY 306	3

Total 64

Requirements for the Major in Earth and Space Sciences

The major in earth and space sciences leads to the Bachelor of Arts degree.

All courses taken to meet major requirements must be taken for a letter grade. In addition, a 2.0 G.P.A. in all upper-division courses used to meet the requirements must be achieved.

	<i>Credits</i>
A. Required departmental courses:	
GEO 122 Physical Geology	4
GEO 226 Historical Geology	4
AST 203 Astronomy	4
ATM 205 Introduction to Atmospheric Sciences	3
B. At least 15 to 20 credits are required from the following: GEO 300, 302, 303, 306, 307, 309, 310, 312, 353, 363	15-20
C. Required courses in the related sciences:	
MAT 125, 126 (MAT 131 may be substituted)	6
CHE 131, 132 or 141, 142	8
PHY 101, 102 or 103, 104	8
At least 6 additional credits from approved MAT, CHE, PHY, or BIO courses	6
Total	63

Preparation for Teachers of Earth Science in Secondary Schools

Curricula leading to provisional certification in earth sciences for secondary school teachers are available from the Department of Earth and Space Sciences.

Honors Programs

Students following one of the B.S. degree programs who have maintained a cumulative grade point average of 3.5 in natural sciences and mathematics through the junior year, may become candidates for departmental honors in geology (GEO), astronomy/planetary sciences (AST), or atmospheric sciences/meteorology (ATM) by applying to the department. Candidates for honors in geology (GEO) must include in their program GEO 302 and 363. Candidates for honors in astronomy/planetary sciences (AST) or atmospheric sciences/meteorology (ATM) must include a sequence of mathematics, physics, or engineering courses approved by the student's advisor following petition by the student.

In addition to the academic program, the student must complete an honors thesis, which will be evaluated by a committee composed of the student's advisor and two other science faculty members including one from outside of the department, and must maintain a minimum 3.5 grade point average in all coursework in natural sciences and mathematics.

Geology Minor

For students majoring in other areas who are interested in obtaining a fundamental understanding of the earth sciences, a minor concentration in geology is available. The minor is aimed at acquainting students with earth materials, the origin and evolution of life on the earth, and physical processes that have shaped the surface of the earth through time. This program, comprising courses offered yearly by the earth sciences faculty, is administered by the Director of Undergraduate Studies, who also serves as student advisor. Minimum requirements for the minor in geology shall be satisfactory completion of the following courses (20 credits):

1. GEO 122 Physical Geology
2. GEO 226 Historical Geology
3. Twelve (12) additional credits from among GEO courses numbered 300 or higher

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Geology Courses

GEO 102 through 109 are primarily designed for the general University student who is not majoring in a physical science but who elects the course because of personal interest or to fulfill the College distribution requirement in the natural sciences. All GEO courses numbered 112 or higher are designed primarily for science majors.

GEO 102 The Earth

A summary of the processes that have shaped the earth and the other terrestrial planets as inferred from study of their surface materials, structural features, and interiors. Topics considered include: (1) the earth in the solar system; (2) earth materials and rock-forming processes; (3) surface processes and their bearing on human activities; (4) crustal deformation and global tectonics; (5) the earth's interior; and (6) the geological features, compositions, and evolution of the terrestrial planets.

Fall, 3 credits

GEO 103 Energy and Mineral Resources

A survey of the origin, distribution, and importance to modern civilization of the fuels and minerals won from the earth. Problems of finding, extracting, and supplying fossil fuels, metallic ores, water, and nonmetallic commodities to industry and community will be considered as well as the ultimate limits on their abundance.

Fall or Spring, 3 credits

GEO 107 Natural Hazards

The phenomena of earthquakes, tidal waves, and volcanoes will be studied to determine their cause, destructive potential, and the degree to which they can be controlled or predicted. The public response to earthquake hazards in terms of building construction and site location as well as short-term response to predictions of imminent earthquakes will be evaluated.

Spring, 3 credits

GEO 109 Fossils and Evolution

The study of fossils and the impact of that study in the past on the knowledge and understanding of the age of the earth and the evolutionary origins of life.

Fall, alternate years, 3 credits (not offered in 1986-87)

GEO 112 Physical Geology Laboratory

Rock and mineral identification, introduction to topographic and geologic maps. This course may not be taken concurrently with GEO 102.

Prerequisite: GEO 102

Fall, 1 credit

GEO 122 Physical Geology

The nature of the earth and of the processes that shape it: The earth's external and internal energy; minerals and rocks; external processes and the evolution of the landscape; internal processes and the structure of the earth; the earth compared with other planets; sources of materials and energy. Laboratories include study of minerals and rocks; landforms as shown on topographical maps and aerial photographs; geologic structures inferred from maps and block diagrams; problem sets. Two lectures and two three-hour laboratories per week. GEO 102/112 and GEO 122 may not both be taken for credit.

Prerequisite: High school chemistry is assumed

Fall, 4 credits

GEO 226 Historical Geology

A summary of earth history stressing principles and broad trends rather than detailed classifications of geological features. Topics will be designed to integrate various aspects of physical stratigraphy, processes of sedimentation, and evolutionary paleontology and paleoecology in an attempt to decipher random or directed patterns in the evolution of the earth.

Prerequisites: GEO 122 or 102/112

Spring, alternate years, 4 credits (not offered in 1986-87)

GEO 300 A History of Geology

The development of theories about earth processes from the 16th century to the mid-19th century. Hutton and Lyell's notions of uniformitarianism will be discussed against the prevailing concepts of catastrophic changes in the configuration of the earth.

Prerequisite: One year of geology or history

Fall, alternate years, 3 credits (not offered in 1985-86)

GEO 302 Paleontology

Principles and methods in the study of the history of life. The origin of life, premetazoan evolution, principles of evolution illustrated by extinct biotas, analysis of diversity and community structure, morphology and autecology of extinct species, and paleobiogeography and dating are considered. Three hours of lecture and one three-hour laboratory session per week.

Prerequisite: GEO 226

Spring, alternate years, 4 credits (not offered in 1985-86)

GEO 303 Stratigraphy

The history and practice of defining units of layered rocks and interpreting their spatial relationships. Topics include the basis for the geologic time scale, lithostratigraphic versus chronostratigraphic units, biostratigraphy,

magnetostratigraphy, facies patterns and Walther's Law, subsurface stratigraphy, and the application of stratigraphy to geological problems. Laboratory will emphasize practical techniques in stratigraphy.

Prerequisite: GEO 312

Fall, 4 credits

GEO 305 Field Geology

A field course that may be taken at any one of several approved University field stations.

1 to 6 credits

GEO 306 Petrology

Principles of the description, classification, and interpretation of igneous, metamorphic, and sedimentary rocks. The student will be introduced to the use of field and laboratory data for interpreting the origin and evolution of various rock types. Two one-hour lectures and one three-hour petrography laboratory session per week.

Prerequisite: GEO 312

Spring, 4 credits

GEO 307 Petrology Laboratory

Study of igneous and metamorphic rocks in thin-section, with emphasis on the application of mineral and textural relations to their genesis.

Corequisite: GEO 306

Spring, 1 credit

GEO 309 Structural Geology

Principles of structural geology, including classification, criteria for recognition and mechanics of formation of crustal structural features. Elementary concepts of rock mechanics. Discussion of important tectonic features of the continents and oceans. Accompanying laboratory to cover map interpretation and algebraic and graphical solutions of structural problems. Three hours of lecture and one three-hour laboratory per week. A two-day weekend field trip will be made to visit classical structural localities in the east.

Prerequisite: GEO 122

Spring, 4 credits

GEO 310 Introduction to Geophysics

The study of the techniques and results of geophysics. The course will cover seismology, gravity, magnetics, and heat flow, with applications to the structure of the earth's crust and interior, earthquakes, and dynamic processes.

Prerequisites: MAT 127 or 132 or 142; GEO 122 or 112

Fall, 3 credits

GEO 311 Analytical Geophysics Laboratory

Laboratory course to develop computational skills solving earth science problems.

Prerequisites: MAT 127 or 132 or 142; GEO 122

Corequisite: GEO 310

Fall, 1 credit

GEO 312 Mineralogy

An introduction to the crystal chemistry, chemistry, phase equilibria, and paragenesis of the rock-forming minerals. Laboratories are devoted to elementary crystallography and mineral identification. Two one-hour lectures, one one-hour recitation, and two three-hour laboratories per week.

Prerequisites: GEO 122; CHE 132 or 142
Fall, 4 credits

GEO 321 Mineral Deposits

A survey of the geological and geochemical characteristics of mineral deposits with emphasis on deposits that are sources of metallic elements. Evidence from field, laboratory, and theoretical studies will be used to deduce the nature of ore-forming processes. Two one-hour lectures and one three-hour laboratory session per week.

Prerequisites: GEO 306, 307, 312; CHE 301 or GEO 323; permission of instructor
Spring, 3 credits

GEO 323 Thermodynamics for Geologists

Introduction to chemical thermodynamics in a geologic context: multicomponent phase equilibria in natural systems; ideal and nonideal behavior in solid, aqueous, and gas phases; mineral solubilities; brief introduction to kinetics with examples from geologic systems.

Prerequisites: CHE 132 or 142; MAT 127 or 132 or 142
Fall, 3 credits

GEO 326 Mineral-Solution Equilibria

Study of chemical reactions and equilibria between natural waters and chemical assemblages. Emphasis is placed on low-temperature processes, although subject matter is equally applicable to systems at elevated temperatures and pressures. Topics also include a brief introduction to kinetics and mass transfer.

Prerequisite: CHE 301 or GEO 323
Spring, alternate years, 3 credits (not offered in 1986-87)

GEO 331 X-Ray Diffraction Techniques

Introduction to the use of X-Ray diffraction methods for the identification and characterization of minerals and mineral-like materials. Topics include Debye-Scherrer photography, powder diffractometry, indexing of powder patterns, quantitative phase determination, single-crystal diffraction, and elements of symmetry theory. Laboratory exercises and individual projects will expose students to a variety of mineralogical and environmental applications. Two hours of lecture and one three-hour laboratory per week.

Prerequisite: GEO 312
Spring, 3 credits

GEO 351 Solid Earth Geophysics

An advanced course in the application of potential theory to problems in geophysics including geodesy and gravity and magnetism and heat flow.

Prerequisite: MAT 306 or 307
Fall, 3 credits

GEO 352 Seismology

An advanced course in the study of earthquakes, earth structure, and tectonics. Topics include wave propagation, body and surface waves, faulting, plate tectonics, and earthquake prediction.

Prerequisites: MAT 306 or 307; PHY 102
Spring, 3 credits

GEO 353 Marine Ecology

A survey of biotic responses to ecological challenges in different marine realms. Controls of diversity and trophic structure in the marine ecosystem, historical aspects of marine realms, productivity in the oceans, plankton, soft-bottom communities, intertidal habitats, coral reefs, deep-sea environments, and effects of pollution in the ocean will be discussed. Crosslisted with BIO 353.

Prerequisite: BIO 343
Spring, 3 credits

GEO 363 Sedimentation and Sedimentary Rocks

A study of sedimentary processes and products. Marine environments (platform, continental shelf, deep ocean), terrestrial environments (fluvial), and transitional environments (deltaic) will be examined in terms of sediment production and provenance, transport, deposition, and structures produced. Identification and understanding of sediment grain properties and of sedimentary structures will be emphasized. Field trips will examine recent and ancient depositional settings. Three hours of lecture and one three-hour laboratory per week.

Prerequisites: GEO 306, 307
Fall, 4 credits

GEO 447 Senior Tutorial in Geology

Seminar courses in advanced topics may be arranged prior to the beginning of the semester. Topics to be discussed will be announced by the department, or students may petition for a particular topic. Weekly conferences will be held with a faculty member. May be repeated once.

Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

GEO 487 Senior Research in Geology

Under the supervision of a faculty member, a major in the department may conduct research for academic credit. A research proposal must be prepared by the student and submitted to the department chairperson for approval before the beginning of the semester in which credit is to be given. A written report must be submitted before the end of the semester. May be repeated once.

Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

Astronomy/Planetary Sciences Courses

AST 101 through 108 are primarily designed for the general University student who is not majoring in a physical science but who elects the course because of personal interest or to fulfill the College distribution requirement in the natural sciences.

AST 101 Introduction to Astronomy

Description of planets, stars, galaxies, black holes, pulsars, quasars, supernovae, and white dwarfs. Man's place in the cosmos. Cosmological and cosmogonical theories. AST 101 and 203 may not both be taken for credit.

Fall and spring, 4 credits

AST 105 Introduction to the Solar System

A general survey of present knowledge of the planets, satellites, interplanetary medium, comets, asteroids, and outer regions of the sun. Begins with a historical introduction and discussion of the methods of science. Emphasizes current NASA deep-space exploration missions and other modern astronomical methods.

Spring, 3 credits

AST 108 The Search for Life in the Universe

A scientific approach to the question: Do intelligent civilizations exist elsewhere in the universe? A review of astronomical setting; the origin of life on earth; possibilities for other types of life in the solar system; methods for communicating with distant advanced civilizations in the galaxy; and analysis of UFO reports and hypotheses of "ancient astronauts."

Fall, 3 credits

AST 203 Astronomy

A survey of the physical nature of the universe for the student with some background in physics and mathematics. May be taken instead of AST 101 by students with better science preparation, but AST 101 and 203 may not both be taken for

credit. An optional observing session will be held one evening per week.

Prerequisite: PHY 101 or 103
Spring, 4 credits

AST 341, 342 Astrophysics I, II

An introduction to, and development of, a firm physical understanding of the observed properties of the stars, Galaxy, and galaxies. Topics will include the structure of the interior and atmosphere of stars; evolution of stars; dynamics of multiple star systems; physics of the interstellar medium; the kinematics, dynamics, and evolution of galaxies; the cosmology and the synthesis of the chemical elements.

Prerequisites to AST 341: AST 203; PHY 306
Prerequisite to AST 342: AST 341
Fall and spring, 3 credits each semester

AST 344 Black Holes, Quasars, and Cosmology

A discussion of some of the most exciting astronomical discoveries of the past 20 years relating to situations of intense gravity fields. The evolution of objects leading to black holes, quasars, pulsars, supernovae, and related objects is followed. Big Bang and competing cosmological models are described with emphasis on how such models may be tested.

Prerequisites: PHY 102; MAT 127 or 132 or 242

Corequisites: PHY 215; MAT 221 or 231 or 241

Fall, 3 credits

AST 345 Undergraduate Research in Astronomy

Student participation in faculty-directed research projects in the area of theoretical and observational astronomy. Topics may include abundance analysis in stars, instrument design and construction, and ionization balance in the interstellar medium.

Corequisite: AST 342
Spring, 1 credit

AST 443 Observational Techniques in Optical Astronomy

An introduction to modern astronomical instrumentation and data handling, and to the use of telescopes. Emphasis will be placed on techniques and equipment appropriate for wavelengths shorter than one micron. Extensive laboratory and observing exercises will be required.

Prerequisites: AST 341 or PHY 301; MAT 341
Spring, alternate years, 4 credits (not offered in 1985-86)

AST 447 Senior Tutorial in Astronomy

Seminar courses in advanced topics may be arranged prior to the beginning of the semester. Topics to be discussed will be announced by the department, or students may petition for a particular topic. Weekly conferences will be held with a faculty member. May be repeated once.

Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

AST 487 Senior Research in Astronomy

Under the supervision of a faculty member, a major in the department may conduct research for academic credit. A research proposal must be prepared by the student and submitted to the department chairperson for approval before the beginning of the semester in which credit is to be given. A written report must be submitted before the end of the semester. May be repeated once.

Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

Atmospheric Sciences/Meteorology Courses

ATM courses are designed primarily for science majors.

ATM 205 Introduction to Atmospheric Sciences

The nature and causes of atmospheric phenomena. Basic physical and chemical processes and energetics. Atmospheric thermodynamics, hydrostatics, dynamics, kinematics. Atmospheric wind systems and pressure patterns, clouds and precipitation, severe storms. Crosslisted with ESC 205.

Prerequisites: PHY 101; MAT 126 or 131 or 141

Spring, 3 credits

ATM 343 Planetary Atmospheres

An introduction to the atmospheres of planets and satellites in our solar system based on a review of observational data and theoretical models, stressing current controversies and the latest information from spacecraft. Hypotheses for the origin and evolution of atmospheres will be studied, including the role of the earth's atmosphere in the origin and nurturing of life.

Prerequisites: PHY 252; MAT 127 or 132 or 142; PHY 306 recommended
Spring, 3 credits

ATM 345 Theoretical Meteorology

An introduction to the quantitative interpretation of the thermal and dynamical structure of planetary atmospheres. Topics to be covered include hydrostatic equilibrium, hydrostatic stability and convection, solar and terrestrial radiation, the atmospheric equations of motion for a rotating planet, and atmospheric energy relationships and general

circulation. Crosslisted with ESC 345.

Prerequisite: ATM/ESC 205
Spring, 3 credits

ATM 346 Dynamic Meteorology

Introduction to the structure and dynamics of the large-scale atmospheric motions that are responsible for weather and climate. Topics will include principles of fluid dynamics; Coriolis force, geostrophic equilibrium, and the Proudman-Taylor theorem; circulation and vorticity, baroclinic instability, cyclogenesis, frontogenesis, and the weather systems; and climate and the general circulation of the atmosphere. Crosslisted with ESC 346.

Prerequisite: ATM/ESC 205
Fall, 3 credits

ATM 348 Atmospheric Physics

An investigation of the relationship between atmospheric phenomena and the nature of matter as expressed in the principles of physics. Topics studied include gravitational effects, thermodynamic properties of atmospheric gases, formation and growth of cloud particles, atmospheric electricity, solar and terrestrial radiation, atmospheric signal phenomena, atmospheric motions, and heat and mass transfer in the atmosphere. Crosslisted with ESC 348.

Prerequisite: PHY 102
Spring, 3 credits

ATM 397 Air Pollution and Its Control

A detailed introduction to the causes, effects, and control of air pollution. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, and particulate matter. The emissions of these gases from natural and industrial sources and the principles used for controlling the latter are described. The chemical and physical transformations of the pollutants in the atmosphere are investigated and the phenomena of urban smog and acid rain are discussed. Crosslisted with ESC 397.

Prerequisites: PHY 102; CHE 131 or 141; upper-division standing
Fall, 3 credits

ATM 447 Senior Tutorial in Atmospheric Sciences

Seminar courses in advanced topics may be arranged prior to the beginning of the semester. Topics to be discussed will be announced by the department, or students may petition for a particular topic. Weekly conferences will be held with a faculty member. May be repeated once.

Prerequisite: Permission of instructor and chairperson
Fall and spring, 1 to 3 credits

ATM 487 Senior Research in Atmospheric Sciences

Under the supervision of a faculty member, a major in the department may conduct research for academic credit. A research proposal must be prepared by the student and submitted to the department chairperson for approval before the beginning of the semester in which credit is to be given. A written report must be submitted before the end of the semester. May be repeated once.
Prerequisite: Permission of instructor and chairperson

Fall and spring, 1 to 3 credits

Earth and Space Sciences Courses

ESS-designated courses except for ESS 475 are primarily for those students who are interested in fulfilling the requirements for certification in earth sciences for secondary school teachers.

ESS 339 Materials and Methods in the Teaching of Earth Sciences

The course emphasizes techniques for the preparation of rocks, fossils, and minerals, especially those from field trips made in the New York, Connecticut, and New Jersey areas. Field collection, identification, laboratory preparation, and classroom display and usage are emphasized. Instruction in the use of classroom equipment and general laboratory equipment is also covered. One three-hour laboratory-lecture per week and four field trips per semester.

Prerequisites: GEO 302, 312; permission of instructor

Corequisite: ESS 340

Spring, 3 credits

ESS 340 Observational Methods and Curriculum Developments in Earth Science Education

Emphasis placed on recent secondary school curricula and development of technical aids (i.e., displays, audio-visual materials for the classroom) as they relate to instruction in earth sciences. Two one-hour seminars a week and three to six all-day observation sessions in elementary, junior, and senior high school classrooms.

Prerequisites: GEO 302, 312; permission of instructor

Corequisite: ESS 339

Spring, 3 credits

ESS 450 Supervised Secondary School Earth Science Student Teaching

Prospective earth science teachers receive supervised practice in teaching secondary school classes by arrangement with selected Long Island junior and senior high schools. Frequent consultation with the supervising teacher and seminar meetings with a department faculty member help the student to evaluate and interpret the student teaching experience. Applications must be filed in the semester preceding that in which the student plans to teach.

Satisfactory/Unsatisfactory grading only.

Prerequisites: ESS 339, 340; permission of instructor

Corequisite: ESS 454

Fall, 12 credits

ESS 454 Earth Science Student Teaching Seminar

Seminar on problems and issues of teaching at the secondary school level. Analysis of actual problems and issues encountered by the student in his or her teaching experience. Satisfactory/Unsatisfactory grading only.

Prerequisites: ESS 339, 340; permission of instructor

Corequisite: ESS 450

Fall, 3 credits

ESS 475 Teaching Practicum in Earth and Space Sciences

Supervision of laboratory or recitation sections of lower-division courses under the close guidance of the course instructor. Includes regular meetings with the instructor for purposes of planning and evaluation; supplementary reading in preparation for laboratory or recitation sessions; and opportunities to make oral presentations, provide individual or innovative instruction, and reinforce previously acquired knowledge. Satisfactory/Unsatisfactory grading only.

Prerequisites: Senior standing; previous preparation in subject field; interview; permission of instructor

Fall and spring, 3 credits

Graduate Courses

Qualified seniors may take 500-level courses with the permission of the department chairperson. See the current *Graduate Bulletin*.

Department of Economics

Professors

Edward Ames, Ph.D., Harvard University: Economic theory; comparative systems; economic history.

Richard Dusansky, Ph.D., Brown University: Public-sector economics; economics of health; microeconomic theory.

John Hause, Ph.D., University of Chicago: Theory of measurement and econometric estimation in human capital; industrial organization; and applied microeconomics.

Charles Hoffmann, Emeritus, Ph.D., Columbia University: Chinese economy; work incentives; industrial organization; economic development.

Bryce Hool, Ph.D., University of California, Berkeley: Macroeconomics; general equilibrium theory; monetary theory.

Estelle James, Chairperson, Ph.D., Massachusetts Institute of Technology: Welfare economics; human resources.

Thomas Muench, Ph.D., Purdue University: Mathematical economics; econometrics; urban economics.

Egon Neuberger, Ph.D., Harvard University: Comparative systems; Soviet and East European economics.

Robert Rosenthal, Ph.D., Stanford University: Microeconomic theory; game theory; operations research.

Mark Walker, Ph.D., Purdue University: Mathematical economics.

Yoram Weiss, Ph.D., Stanford University: Labor economics; microeconomics.

Robert Willis, Ph.D., University of Washington: Labor economics; economic demography; microeconomic theory.

Associate Professors

Michael Hurd, Ph.D., University of California, Berkeley: Econometrics; labor; macroeconomics.

Marvin Kristein, Ph.D., New School for Social Research: Managerial economics; economics of health.

Robert Porter, Ph.D., Princeton University: Industrial organization; econometrics.

Warren Sanderson, Ph.D., Stanford University:
Economic history; economic demography.

Charles Staley, Ph.D., Massachusetts Institute
of Technology: History of economic thought;
international trade.

Dieter Zschock, Ph.D., Tufts University:
Development economics; labor economics.

Michael Zweig, Ph.D., University of Michigan:
Political economy; labor economics.

Assistant Professors

James Anton, Ph.D., Stanford University:
Macroeconomics; game theory.

Thomas Coleman, Ph.D., University of
Chicago: Labor; macroeconomics; finance.

William Dawes, Director of Undergraduate
Studies, Ph.D., Purdue University:
Econometrics; economic history. Recipient of
the State University Chancellor's Award for
Excellence in Teaching, 1973-74

Kenneth Hendricks, Ph.D., University of
Wisconsin: Decision theory; economics of
natural resources; international trade.

Luis Locay, Ph.D., University of Chicago:
Microeconomics; empirical microeconomics.

Therese McGuire, Ph.D., University of
Minnesota: Public finance; urban economics.

Alain Nairay, Ph.D., Yale University:
Economic theory; international economics;
econometric theory; optimal control theory.

Alfonso Novales, Ph.D., University of
Minnesota: Macroeconomics; econometrics.

John Winn, Ph.D., University of Texas at
Austin: Econometrics.

Lecturer

Paul Gertler, M.A., University of Wisconsin:
Applied microeconomics; econometrics.

Teaching Assistants

Estimated number: 19

The undergraduate major in economics provides training for graduate studies in economics, business, and law. Students may also use it to prepare for entry-level positions in research and policy-making organizations such as the government, banks, and consulting firms.

Economics is a quantitative social science, and the curriculum reflects that. Although major requirements include only a semester of calculus, students planning to use their

background in economics for graduate studies or in their careers are strongly urged to take additional courses in mathematics and computer science.

The areas of study in the department fall into three broad classifications. The first of these, *microeconomics*, deals with the theoretical and empirical study of the behavior and interrelationships of individual economic agents, such as firms and individuals, and their interaction through markets. Next, *macroeconomics* examines the large sectors of the economy such as government, business, money and banking, and international trade. It also covers such topics as unemployment, inflation, and economic growth. Finally, *econometrics* uses statistics to estimate, test, and predict patterns of behavior of the various units and relationships that make up the economy.

Requirements for the Major

The major in economics leads to the Bachelor of Arts degree. The following courses are required.

	Credits
A. A minimum of 36 credits in economics (including not more than seven credits of 100-level courses) distributed as follows:	
1. An introductory course in economics (ECO 101 or 104 or 105)	4
2. ECO 251 Intermediate Microeconomic Theory	4
3. ECO 252 Intermediate Macroeconomic Theory	4
4. A minimum of 18 credits in ECO courses numbered 300 and above	18
5. Two additional economics courses	6
B. One semester of calculus (MAT 125 or 131 or 141)	3-4
Total	39-40

Note: No course for the major may be taken for Pass/No Credit. The G.P.A. for upper-division courses counted toward the major must be at least 2.0. No transfer credit lower than C may be applied toward the upper-division major requirement.

Honors Program in Economics

The honors program in economics is designed to develop the student's research and writing skills. It is composed of three courses, usually beginning in the second semester of the student's junior year, although some students may enter the program as first-semester seniors. To be admitted to the honors program, students must have completed ECO 251, 252 and one ECO course numbered 325 or above, and must have maintained a grade point average of at least 3.4 in economics and at least 3.2 overall. Interested students should apply to the Director of Undergraduate Studies to obtain the permission of the department.

The first course, ECO 395, involves much writing and preparation of small research projects. By the end of the semester the student should already have a senior thesis topic well in mind and have a faculty supervisor for the thesis. The thesis itself will be written usually in the first half of the senior year in ECO 495. Each student writing a thesis will also enroll in ECO 496 Senior Seminar, where work will be presented and critically evaluated by the students in the program.

The thesis will be evaluated by the student's faculty supervisor, the faculty member in charge of the senior seminar, and a faculty member from another department. When the honors project has been carried out with distinction, conferral of honors will be contingent upon the student's achieving a 3.5 grade point average in all economics courses taken in the senior year.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

ECO 101 Introduction to Economic Analysis

An introduction to economic analysis. Microeconomics (the study of individual, firm, industry, and market behavior) and macroeconomics (the study of the determination of national income, employment, and inflation). May not be taken for credit in addition to ECO 104 or 105. *Fall and spring, 4 credits*

ECO 104 Introduction to Economic Analysis: Honors

An introduction to economics that emphasizes the analytical and quantitative

nature of the discipline. Microeconomics (the study of individual, firm, industry, and market behavior) and macroeconomics (the study of the determinants of national income, employment, prices, and economic growth) are covered in more depth than in a traditional introductory course. May not be taken for credit in addition to ECO 101 or 105.

Prerequisite: Permission of department; priority given to Scholar Incentives students
Pre- or corequisite: One semester of calculus
Fall, 4 credits

ECO 105 Introduction to Political Economy

The basic elements of the capitalist system of production and distribution; a historical overview of the development of capitalism from feudalism; Marxism as well as orthodox approaches to microeconomic analysis (markets and price determination) and macroeconomics (inflation, unemployment, economic crisis). Topics also include class structure, exploitation, and the role of the state in capitalist society. May not be taken for credit in addition to ECO 101 or 104.
Spring, 4 credits

ECO 114 Financial Accounting

Introduction to some formal accounting statements commonly involved in economic analysis. Topics include business balance sheet and profit and loss statements and flow of funds accounting.
Fall and spring, 3 credits

ECO 203 History of Economic Thought

A study of the evolution of economic thought with reference to the basic problems of the discipline: factor allocation, distribution, growth, etc. The major schools are emphasized in the survey.
Prerequisite: ECO 101 or 104 or 105
Fall, 3 credits

ECO 214 Managerial Accounting

Concepts, theories, and use of the accounting system as a source of information in the planning, control, and evaluation of the enterprise by the manager. Cash and funds flow analysis, budget development, and cost control mechanisms.
Prerequisite: ECO 114
Fall and spring, 3 credits

ECO 222 Economics of Socialism

Analysis of the various approaches to the problems of translating Marxian socialist principles into functional economic institutions. Theoretical issues of socialism will be stressed and will be illustrated with examples taken from the experience of various communist countries.
Prerequisite: ECO 101 or 104 or 105
Fall, 3 credits

ECO 237 Economics of Industrial and Labor Relations

Evolution of labor unions and collective bargaining, with an emphasis on current labor problems, union and non-union; changing composition of the labor force; wage differentials; the theory of wage determination; labor legislation; and unemployment.
Prerequisite: ECO 101 or 104 or 105
Spring, 3 credits

ECO 243 Comparative Economic Systems

A study of different types of economic systems, comparing structures, the ways basic economic problems of factor allocation and distribution are dealt with, and the result achieved in output and growth.
Prerequisite: ECO 101 or 104 or 105
Fall, 3 credits

ECO 251 Intermediate Microeconomic Theory

Analytical study of the behavior of fundamental economic units (consumer and the firm) and its implications for the production and distribution of goods and services. Emphasis on the use of economic theory to provide explanations of observed phenomena, including the analytical derivation of empirically verifiable propositions.
Prerequisites: One semester of calculus; either (a) ECO 101 or (b) ECO 104 or (c) ECO 105 and one other ECO course except 114
Fall and spring, 4 credits

ECO 252 Intermediate Macroeconomic Theory

The theory of national income determination, employment, distribution, price levels, inflation, and growth. Keynesian and classical models of the different implications of monetary and fiscal policy.
Prerequisites: One semester of calculus; either (a) ECO 101 or (b) ECO 104 or (c) ECO 105 and one other ECO course except 114
Fall and spring, 4 credits

ECO 317 Marxist Political Economy

A Marxian analysis of capitalism, including some of the writings of Marx, Lenin, and Mao Tse-tung. The method of dialectical, historical materialism is applied to the historical development of capitalism, the operation of modern advanced monopoly capitalism, and such phenomena as economic crisis, war, and the capitalist conditions that give rise to socialism.
Prerequisites: ECO 101 or 104 or 105
Fall, 3 credits

ECO 318 Economics of Manpower Planning

Analysis of changing manpower requirements and labor force composition in the United States. Evaluation of manpower legislation and programs at national, regional, and local levels, and of educational and other institutional responses to employment problems.
Prerequisite: ECO 237
Spring, 3 credits

ECO 320 Mathematical Statistics

An introduction to statistical methods and their properties that are useful in analysis of economic data. Topics include elements of probability theory and its empirical application, univariate and multivariate distributions, sampling distributions, limiting distributions, point and interval estimation. Regular problem sets and occasional projects are required. Students may not receive credit for this course and AMS 310.
Prerequisites: ECO 101 or 104 or 105; one semester of calculus
Fall, 4 credits

ECO 321 Econometrics

The application of mathematical and statistical methods to economic theory. Topics include the concept of an explanatory economic model, multiple regression, hypothesis testing, simultaneous equation models, and estimating techniques. Emphasis is placed on the application of econometric studies.
Prerequisite: ECO 320 or AMS 310
Spring, 4 credits

ECO 325 International Economics

Economic theory of international trade, protection, commercial policy, customs unions, capital movements, and international finance.
Prerequisite: ECO 251
Fall or spring, 3 credits

ECO 326 Economics of American Industry

Application and extension of the theory of the firm to actual firms and industries, emphasizing problems that might call for various sorts of regulation of firms. Topics include market concentration, applications of the theories of monopoly and oligopoly, mergers, price discrimination, product variation, advertising, and public utility pricing, with illustrations from specific industries.
Prerequisite: ECO 251
Fall or spring, 3 credits

ECO 333 Demographic Economies

Problems related to both economics and demography. In scope, the material deals with both contemporary and historical situations and with both developing and developed countries. Microeconomic aspects of the course concern fertility, marriage, divorce, and migration; macroeconomic

aspects concern the implications for growth and development of various patterns of population increase.

Prerequisites: ECO 251 and 252

Corequisite: ECO 321

Fall or spring, 3 credits

ECO 335 Economic Development

An examination of problems and aspects facing developing countries in the transition from traditional, predominantly rural economic systems to modern, largely urban-oriented economies. Theories of economic growth and development will be presented in the light of the actual experience of developing countries. May not be taken for credit in addition to the discontinued ECO 225.

Prerequisite: ECO 252

Fall or spring, 3 credits

ECO 337 Advanced Labor Theory

Microeconomic theory is used to investigate specific topics in the field of labor economics. Areas to be covered include the household's decision-making process and the supply of labor, investments in human capital and discrimination in the marketplace, the effect of market structure on the demand for labor, and the distribution of income.

Prerequisite: ECO 251

Fall or spring, 3 credits

ECO 342 Human Resources: Health

An application of microeconomic theory to the health sector of the economy. Areas to be covered include the demand for health care and the role of health insurance, the alleged shortage of physicians' services, the effects of physician specialty choice and location, the hospital sector of the health care market, and the utilization of non-physician support personnel.

Prerequisite: ECO 251

Fall or spring, 3 credits

ECO 344 Urban Economics

Theories of residential and industrial location; examination of intrametropolitan changes in industry location, suburbanization of employment and population, and ethnic problems in metropolitan areas; costs and benefits of urban services and policy formation for urban development and renewal.

Prerequisite: ECO 251

Fall or spring, 3 credits

ECO 345 Law and Economic Issues

How the American legal system reflects the developing economy. The American court system as a social decision-making mechanism that allocates social costs and benefits among economic effects; the allocation of liability for increasingly complex goods; the development of the contract; property under the 14th amendment; changes in the value of money; and government role in creating wealth.

Prerequisite: ECO 251

Fall or spring, 3 credits

ECO 348 Analysis for Managerial Decision Making

Development of analytical techniques (such as linear programming and statistical decision theory) for making economic decisions, both in public and private enterprises. The student will be making decisions on large-scale and detailed cases in realistic managerial situations and will be introduced to the use of the computer.

Prerequisite: ECO 251

Fall and spring, 4 credits

ECO 351 Advanced Mathematical Microeconomics

Alternative concepts of equilibrium state of an economic system: Do such states exist? Can they actually be attained? What properties do they have? This analysis leads to the study of market failures and the possibilities for remedying such failures.

Prerequisites: ECO 251; MAT 127 or 132 or 142

Fall or spring, 3 credits

ECO 352 Advanced Mathematical Macroeconomics

A continuation of ECO 252 on the study of macroeconomic models and their application at a more advanced level. Special emphasis is placed on the study of the microeconomic foundations of macroeconomic models. An introduction to macrodynamics is also provided through mathematical studies of business cycles and other growth theories.

Prerequisites: ECO 252; MAT 127 or 132 or 142

Fall or spring, 3 credits

ECO 360 Money and Banking

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

Prerequisite: ECO 252

Fall and spring, 3 credits

ECO 379 Economics of Exhaustible Resources

The application of economic theory to the analysis and evaluation of the different ways of organizing the use of exhaustible resources. The common property problem is examined in fisheries, oil extraction, and oil exploration; applies the theory of intertemporal resource allocation to fisheries, forests, and oil pools; the issue of whether resources are becoming more or less scarce will be considered. The emphasis is on analytical models.

Prerequisite: ECO 251

Fall or spring, 3 credits

ECO 383 Public Finance

Theories of taxation and the satisfaction of public wants; the nature of public goods; theory of public expenditure; effects of taxes on resource allocation and welfare; theories of tax incidence; fiscal and equity implications of alternative tax schemes; fiscal dynamics and growth; intergovernmental fiscal relations.

Prerequisites: ECO 251 and 252

Fall or spring, 3 credits

ECO 385 American Economic History I

A survey of the U.S. economy from colonial times to the present. The changing structure of the economy is analyzed using the standard tools of the economist to examine the determinants of changes in factor inputs, institutional arrangements, prices and money, balance of payments, and government policy.

Prerequisites: ECO 251 and 252

Fall or spring, 3 credits

ECO 386 American Economic History II

Intensive study of selected topics in U.S. economic history. Topics may include: (1) long-term growth, (2) technical change, (3) monetary history, (4) institutional change and growth, and (5) cyclical economic phenomena. Emphasis will be placed on interrelating economics and history and on student research.

Prerequisite: ECO 385

Corequisite: ECO 321

Spring, 3 credits

ECO 387 Stabilization Policy, Business Cycles, and Forecasting

The use of econometric models and techniques to forecast economic conditions and evaluate alternative economic policies. Properties of the Federal Reserve Board model, the Brookings model, and other major models in use in the U.S. economy will be investigated. Topics will also include specification of demand and supply equations in the analysis of single-product markets. Students will be expected to estimate and manipulate actual models.

Prerequisites: ECO 251, 252, and 321

Fall or spring, 3 credits

ECO 389 Corporate Finance

The corporation as a social and economic institution for raising capital and organizing economic activity, emphasizing financial decision making. The birth, operation, growth, and death of corporations; risk-taking and control; sources and uses of funds, financial management; mergers, acquisitions, conglomeration; reorganization, bankruptcy; regulation; public responsibility.

Prerequisites: ECO 251, 252, and 360

Fall or spring, 3 credits

ECO 395 Junior Seminar

The first course of the honors sequence in economics, stressing development of research and writing skills on economic

subject matter. The student will write several papers, which will be evaluated critically in the seminar. Particular subject matter will vary. Enrollment will be limited to 15 students.

Prerequisite: Admission to honors program in economics
Schedule: Spring, 3 credits

ECO 400 Topics in Economic Theory

Topics in economic theory will be offered as student demand and faculty time and interest coincide. Some of the possible semester sections include optimization theory, growth theory, investment determination, and advanced microeconomic theory. Students should check with the department for information about sections to be offered in any particular semester. May be repeated for different topics.

Prerequisites: Vary with individual sections
Schedule to be announced, 3 credits

ECO 402 Topics in Quantitative Economics

Topics in quantitative economics will be offered as student demand and faculty time and interest coincide. Some of the possible semester sections include forecasting with econometric models, time series and spectral analysis, decision theory, game theory. Students should check with the department for information about sections to be offered in any particular semester. May be repeated for different topics.

Prerequisites: Vary with individual sections
Schedule to be announced, 3 credits

ECO 404 Topics in Development and Comparative Systems

Topics in development and comparative systems will be offered as student demand and faculty time and interest coincide. Some of the possible semester sections include economic development in modern Europe or China; Soviet or Eastern European economies; and economic development in the Middle East or Latin America. Students should check with the department for information about sections to be offered in any particular semester. May be repeated for different topics.

Prerequisites: Vary with individual sections
Schedule to be announced, 3 credits

ECO 406 Topics in Political Economy

Topics in political economy will be offered as student demand and faculty time and interest coincide. Some of the possible semester sections include imperialism, political economy of Latin America, and property relations. Students should check

with the department for information about sections to be offered in any particular semester. May be repeated for different topics.

Prerequisites: Vary with individual sections
Schedule to be announced, 3 credits

ECO 408 Topics in Applied Economics

Topics in applied economics will be offered as student demand and faculty time and interest coincide. Some of the possible semester sections include advanced topics in economics of education, capital and financial markets, and medical economics. Students should check with the department for information about sections to be offered in any particular semester. May be repeated for different topics.

Prerequisites: Vary with individual sections
Schedule to be announced, 3 credits

ECO 475 Undergraduate Teaching Practicum in Economics I

Each student will conduct a regular recitation or problem section that will supplement a regular economics course. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion, initial correction of homework and tests, and helping students with problems. Satisfactory/Unsatisfactory grading only.

Prerequisite: Permission of instructor and department
Fall and spring, 3 credits

ECO 476 Undergraduate Teaching Practicum in Economics II

This course continues on a more advanced level training in the techniques of organization and management in the teaching of economics courses. Students will be expected to assume greater responsibility in such areas as designing practice homework, analyzing and evaluating test results, and observing and assisting new teaching assistants to develop new teaching techniques. Students may not serve as

teaching assistants in the same course twice. It is expected that the course in which a student is permitted to work as a teaching assistant will be of at least equal difficulty as the course in which he or she previously served as teaching assistant. Satisfactory/Unsatisfactory grading only.

Prerequisites: ECO 475; permission of instructor and department
Fall and spring, 3 credits

ECO 487 Independent Research

A course of study providing opportunities for a student to undertake independently a special project entailing advanced readings, reports and discussion, or research on topics of his or her choosing with the guidance of an assigned faculty member. When the work of two or more students in this course is related, a seminar may be organized covering the area of common interest. May be repeated.

Prerequisite: Permission of department
Fall and spring, 1 to 6 credits each semester

ECO 488 Internship

Participation in local, state, and national public and private agencies and organizations. Students will be required to submit written progress reports and a final written report on their experience to the faculty sponsor and the department. Satisfactory/Unsatisfactory grading only. May be repeated to a limit of 12 credits, but no more than 6 credits count toward economics major requirements.

Prerequisites: ECO 251 and 252; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

ECO 495 Senior Thesis

The student will write a major research paper under the supervision of a faculty member as part of the requirements for successful completion of the honors program in economics.

Prerequisites: ECO 395; permission of department
Corequisite: ECO 496
Fall, 4 credits

ECO 496 Senior Seminar

Comprised of all students enrolled in ECO 495. Each student will be required to make periodic and final presentations of the senior thesis. Students will be evaluated on their participation, particularly the helpfulness of their evaluations of other students' work.

Prerequisites: ECO 395; permission of department
Corequisite: ECO 495
Fall, 2 credits

Interdisciplinary Program in Engineering Chemistry

Program Committee

Patrick Herley: Materials Science and Engineering

Robert Kerber: Chemistry

The interdisciplinary program in engineering chemistry (ECM), which leads to the Bachelor of Science degree, is designed to provide students with a basic understanding of the chemistry and materials technology underlying modern materials engineering.

This program emphasizes a strong background in physical chemistry infused with an orientation toward the solid-state sciences and materials technology. Its central theme is a chemistry core strengthened by materials science and laboratory courses, the latter with a unique "Chemistry of Materials" component. The choice of suitable electives will enable the student to emphasize such different aspects of solid-state sciences as polymeric materials, modern industrial processes, mineral resources, biomaterials, etc.

Jointly sponsored by the College of Arts and Sciences and the College of Engineering and Applied Sciences, the program is a basic preparation for training chemical-materials professionals who can enter a wide range of industries or proceed to graduate work in either solid-state chemistry or materials science.

BS/MS Program

Engineering chemistry students who are interested in pursuing graduate study in materials science may wish to apply for the five-year program at the end of their junior year. For further details, see p. 220.

College Proficiency and Distribution Requirements

Students majoring in engineering chemistry must meet the requirements of the College of Arts and Sciences with the following exception to the distribution requirements: Elementary foreign language courses numbered 111 through 116, if taken to fulfill the language proficiency requirement, may also be used to fulfill the Arts and Humanities requirement.

Requirements for the Major

The interdisciplinary major in engineering chemistry leads to the Bachelor of Science degree. The following courses are required and must be taken for a letter grade. No transferred course with a grade lower than C- may be used to fulfill any major requirement.

Mathematics and Basic Science Requirements

	Credits
1. MAT 131 Calculus I and MAT 132 Calculus II	8
2. MAT 231 Calculus III and MAT 306 Calculus IV Multivariate Calculus or MAT 221 Calculus III Differential Equations and AMS 362 Engineering Mathematics, B	6-7
3. CSE 111 Computer Science for Engineers	3
4. CHE 131, 132 General Chemistry or CHE 141, 142 Honors Chemistry	8

5. CHE 133, 134 General Chemistry Laboratory or CHE 143, 144 Honors Chemistry Laboratory	2
6. PHY 101, 102 General Physics I, II; PHY 251 General Physics III or ESG 281 An Engineering Introduction to the Solid State	11-12
Subtotal	38-40

Note: The following alternate calculus sequences may be substituted: MAT 141, 142 or 125, 126, 127 for 131, 132; MAT 241 for 231; MAT 307 for 306.

Core	Credits
1. CHE 301, 302 Physical Chemistry I, II	6
2. CHE 303 Solution Chemistry Laboratory	2
3. CHE 304 Chemical Instrumentation Laboratory	2
4. CHE 321 or 331 Organic Chemistry	3
5. ESG 332 Materials Science I: Structure and Properties of Materials	4
6. ESG 333 Materials Science II: Electronic Properties	4
7. ESM 302 Materials Design and Techniques	3
Subtotal	24
Total	62-64

Electives

Selection of technical and open electives to give a total number of credits of 120. Students are advised to divide their electives among courses within the College of Engineering and Applied Sciences and the Chemistry Department that strengthen their professional interests, and courses in the social sciences and humanities that help them place the problems of society and industry in perspective.

Students who wish to meet the American Chemical Society certification requirements must take, in addition to the above, CHE 322, 333, and 334 (organic), and two additional advanced chemistry courses.

Department of English

Professors

Thomas J.J. Altizer, Ph.D., University of Chicago: Religion and literature; myth and imagination.

David V. Erdman, Emeritus, Ph.D., Princeton University: Romantic literature; Blake; textual and critical editing.

Thomas B. Flanagan, Ph.D., Columbia University: Irish literature; modern British literature; Joyce; Yeats.

Donald K. Fry, Ph.D., University of California, Berkeley: Old English; Middle English; Chaucer.

Homer B. Goldberg, Ph.D., University of Chicago: Restoration and 18th-century literature; the novel; literary criticism. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1972-73.

Harvey S. Gross, Ph.D., University of Michigan: Comparative literature; prosody and poetic theory; modern intellectual history.

June Jordan: Poetry; creative writing; children's literature; women's studies; Black American literature.

Jan Kott, Emeritus, Ph.D., Lodz University: Comparative literature; Shakespeare; the drama; literary criticism.

Thomas Kranidas, Ph.D., University of Washington: 17th-century literature; Milton.

Richard L. Levin, Ph.D., University of Chicago: Renaissance drama; literary criticism.

Richard A. Levine, Chairperson, Ph.D., Indiana University: Victorian literature; the novel; literature and society.

Jack Ludwig, Ph.D., University of California, Los Angeles: 20th-century literature; Joyce; Yeats; creative writing.

Thomas E. Maresca, Ph.D., The Johns Hopkins University: Restoration and 18th-century literature; the epic; satire.

Ruth Miller, Ph.D., New York University: Early American literature; poetry; Dickinson; Black American literature.

Peter Shaw, Emeritus, Ph.D., Columbia University: American literature; 20th-century literature.

Louis Simpson, Ph.D., Columbia University: 19th- and 20th-century British and American literature; poetry; creative writing; literary criticism.

Judah L. Stampfer, Ph.D., Harvard University: Renaissance and 17th-century literature; Shakespeare; literature and psychology.

John A. Thompson, Emeritus, Ph.D., Columbia University: 20th-century literature; prosody; literary criticism.

Herbert Weisinger, Emeritus, Ph.D., University of Michigan: Renaissance literature; Shakespeare; mythology and ritual.

Rose Zimbardo, Ph.D., Yale University: Restoration, Renaissance, and 18th-century literature; modern drama. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1980-81.

Associate Professors

Don Bialostosky, Ph.D., University of Chicago: Romantic literature; literary criticism.

Paul J. Dolan, Ph.D., New York University: Modern British and American literature; Yeats; literature and politics.

Peter Elbow, Director of Writing Programs, Ph.D., Brandeis University: Composition and rhetoric; Chaucer; pedagogy.

Edward Fiess, Emeritus, Ph.D., Yale University: American literature; 20th-century literature; biography and autobiography.

Clifford C. Huffman, Ph.D., Columbia University: Renaissance literature; Shakespeare.

Aaron Lipton, Ed.D., New York University: The teaching of reading, composition, and literature; the psychology of literature.

Gerald B. Nelson, Ph.D., Columbia University: 20th-century British and American literature; poetry.

Paul A. Newlin, Ph.D., University of California, Los Angeles: 19th-century American literature; Black American literature; creative writing.

Joseph Pequigney, Ph.D., Harvard University: 17th-century literature; Shakespeare.

Thomas Rogers, Emeritus, Ph.D., University of Pennsylvania: Restoration and 18th-century literature; rhetoric; the teaching of composition and literature.

Walter Scheps, Ph.D., University of Oregon: Old English; Middle English; the history of the English language.

Sallie Sears, Ph.D., Brandeis University: The novel; Henry James; literary criticism; women's studies.

David Sheehan, Ph.D., University of Wisconsin: Restoration and 18th-century literature.

Stephen J. Spector, Ph.D., Yale University: Old English; Middle English; the history of the English language.

Michael Sprinker, Ph.D., Princeton University: Literary criticism; modern literature.

Susan Squier, Director of Undergraduate Studies, Ph.D., Stanford University: 19th- and 20th-century British literature; women's studies.

Alice S. Wilson, Ph.D., Cornell University: Renaissance literature; classical backgrounds of English literature; mythology.

Assistant Professors

Bruce W. Bashford, Ph.D., Northwestern University: Literary criticism; rhetoric and the teaching of composition.

Helen Cooper, Ph.D., Rutgers University: Victorian literature; creative writing; women's studies.

Sheryl I. Fontaine, Ph.D., University of California, San Diego: Rhetoric and the teaching of composition; modern literature.

Diane Fortuna, Ph.D., The Johns Hopkins University: 20th-century British and American literature; 19th-century American literature.

William J. Harris, Ph.D., Stanford University: American literature; Black American literature; creative writing.

James Harvey, A.M., University of Michigan: The novel; drama; film.

David E. Laurence, Ph.D., Yale University: Colonial and 19th-century American literature.

Adrienne Munich, Ph.D., City University of New York: Victorian literature.

Stacey Olster, Ph.D., University of Michigan: 20th-century British and American literature; the novel.

Lecturers

Patricia A. Belanoff, Associate Director of Writing Programs, Ph.D., New York University: The teaching of composition; Old English; Middle English.

Leonard Gardner, Ph.D., University of Chicago: Secondary education.

Jane Harada, M.A., Columbia University: Journalism.

Teaching Assistants

Estimated number: 56

Courses offered by the Department of English seek to develop students' understanding of important works of English and American literature, to provide a historical awareness of the range of thought and experience that has found expression in the English language, and to enlarge students' personal horizons by reflection upon cultural, social, and aesthetic experience. The development of this kind of knowledge also means a development of students' ability to express themselves effectively, in speech and in writing. Courses in English instruct students in becoming more observant, thoughtful, and articulate in response to what they read.

Requirements for the Major in English

The major in English leads to the Bachelor of Arts degree. The following courses are required.

A. Study within the Area of the Major (Courses must be taken for a letter grade, and only two courses with grades in the D range may be counted.)

	Credits
1. EGL 204 Literary Analysis and Argumentation, which should be taken as an introduction to the major	3
2. EGL 205 and 206 Survey of British Literature I and II, which should be taken in the sophomore year	6
3. <i>Either</i> EGL 207 History and Structure of the English Language <i>or</i> LIN 101 Introduction to Linguistics	3
4. <i>Either</i> EGL 217 American Literature I <i>or</i> EGL 218 American Literature II	3

5. One of the following Shakespeare courses: EGL 241 or 242 or 243	3
6. Three Period Courses from the sequence numbered EGL 300-320	9
7. One Major Author course from the sequence numbered EGL 340-353	3
8. One Interdisciplinary or Genre course from the sequences numbered EGL 260-276 or 362-374	3
9. Elective: one additional course elected from those offerings numbered EGL 202-496, <i>exclusive of those listed in Note 1 below</i>	3
Subtotal	36

Notes on Section A

1. No English courses below the 200 level may be used to fulfill English major requirements. In addition, the following courses may not be used for the English major: EGL 285, 286, 287, 288, 387, 388, 393, 394, 398, 488.
2. Appropriate EGL 490 seminars may be used to satisfy the above requirements by permission of the Director of Undergraduate Studies.

B. Study in Related Areas (Courses may be taken under the P/NC option.)

	Credits
1. One year (or its six-credit equivalent) of college study of a foreign language at the intermediate level or beyond	6
2. Six credits of study of British, American, medieval, or Renaissance history	6
3. Six credits of study in the humanities outside of English courses and in addition to the foreign language requirement above	6
Subtotal	18
Total	54

Teacher Preparation

Students majoring in English and seeking provisional certification as secondary school English teachers are required to have a departmental advisor. They are asked to consult with the Director of Undergraduate Studies as soon as they have decided to seek certification.

Requirements for Provisional Certification

- A. All requirements for the major in English
- B. A 3.0 G.P.A.
- C. A writing sample
- D. Professional educational requirements
 1. EGL 396 Literature and Psychology of Adolescence (3 credits)
 2. EGL 398 Methods of Instruction in Literature and Composition (3 credits)
 3. EGL 450 Supervised Secondary School Student Teaching (12 credits)
 4. EGL 454 Student Teaching Seminar (3 credits)
 5. SSI 265 Drug and Alcohol Education (1 credit)
 6. SSI 350 Foundations of Education (3 credits)

The Honors Program in English

To be awarded honors a department major must: (1) maintain an overall G.P.A. of at least 3.0 and a G.P.A. of at least 3.5 in English courses taken for the major; (2) receive a grade of A or A- in an English course designated as an Honors Section (these sections are announced in the department's brochure issued before registration each semester); (3) write a senior thesis judged worthy of honors. Requirements (1) and (2) are prerequisites for undertaking the senior thesis. Students eligible to write a senior thesis must find a member of the department faculty to act as a thesis advisor and enroll in EGL 495 or 496. The thesis topic must be approved by the Undergraduate Program Committee. The thesis will be evaluated by the thesis advisor, a member of the Undergraduate Program Committee, and a third reader from outside the department. For further information consult the Director of Undergraduate Studies.

The Minor in English

The minor, which requires 18 credits, is organized around the student's interest in a particular period of British or American literature. The specific distribution of the credits should be determined in consultation with the Director of Undergraduate Studies. A general model for this distribution is the following:

	Credits
A. EGL 204 Literary Analysis and Argumentation, required of all minors	3
B. One of the following Shakespeare courses: EGL 241, 242, 243. Required of all minors	3
C. One Survey course in the period of the student's interest	3
D. One Period course in the period of the student's interest	3
E. One Major Author or Genre course appropriate to the student's interest	3
F. One elective: any 300- or 400-level English course	3
Total	18

Note: All courses for the minor must be taken for a letter grade.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System. Details of staffing and specific course descriptions should be obtained from schedules published by the English Department before registration each semester. Reading lists are also available in advance.

Composition

Note: EGC courses may not be used for English major credit.

EGC 100 Introduction to the Writing Process

Extensive practice in writing to help students develop clear thinking and more fluent use of language. Writing from experience will be emphasized. There will be less emphasis on expository writing and formal revision than in EGC 101. Satisfactory/ Unsatisfactory grading only.

Fall and spring, 3 credits

EGC 101 Composition I

A course in writing. Through the writing and revision of frequent short papers, the student is expected to develop proficiency in the composition of expository and argumentative essays.

Prerequisite: Placement by English Placement Examination or by EGC 100 or ESL instructor. (This course does not satisfy the writing requirement for students who score "Strong" on the Placement Examination.)
Fall and spring, 3 credits

EGC 102 Composition II

A continuation of the development of expository and argumentative writing skills begun in EGC 101. The course will include the frequent writing and revision of short papers.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGC 103 Writing Proficiency

An intensive course for students unable to pass the English Proficiency Examination. Frequent papers, exercises, and conferences directed to students' individual writing problems. Open only to those who have failed the English Proficiency Examination twice after passing EGC 101, or to transfer students with composition credits who fail the examination twice. Passing the course will satisfy the English proficiency requirement.

Prerequisites: Sophomore standing; permission of Director of Writing Programs
Fall and spring, 3 credits

EGL 202 Advanced Composition

EGL 204 Literary Analysis and Argumentation

For descriptions and prerequisites see below under *Lower-Division Courses in Literature*.

Note: For additional courses in writing, see EGL 285, 286, 287, 288, 385, 387, 388, 393, 394.

Introduction to Literature

These courses give instruction and practice in responding thoughtfully to literature, in speech and in writing. They are designed primarily for freshmen but may be suitable for other students seeking basic courses in reading, discussing, and writing about literary works. These courses may not be used for English major credit.

EGL 191 Introduction to Poetry

Intensive analysis of poems in English of various periods and types and varying complexity. (Not for English major credit.)
Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 192 Introduction to Fiction

Analysis of stylistic and structural modes employed by various writers of short stories and novels. (Not for English major credit.)
Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 193 Introduction to Drama

Introduction to the analysis of drama, emphasizing the literary more than the theatrical dimension of the works, through examination of a range of plays from a variety of genres and periods. (Not for English major credit.)

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 199 Freshman Honors Seminar

Intensive reading and discussion of related works of imaginative literature. Enrollment limited to 15. For freshmen with exceptionally strong records in high school.

Prerequisite: Permission of department; EGC 101 or "Strong" on the English Placement Examination. Priority given to Scholar Incentives students
Fall and spring, 3 credits

Lower-Division Courses in Literature

These courses develop skills in interpretation and provide the background necessary for advanced courses in literature. They may also be of interest to the non-major. Many of these courses offer practice in writing expository prose essays. *EGL 202 Advanced Composition* and *EGL 204 Literary Analysis and Argumentation* offer intensive instruction in the preparation of argumentative essays. Students should note that EGL 204 is, with some exceptions, a standard prerequisite for upper-division courses in English. Prospective English majors should consult the major requirements listed above for information concerning required lower-division courses.

EGL 202 Advanced Composition

Students will work on advanced problems in exposition, argument, rhetoric, and style through writing and discussion of their own papers as well as analysis of prose texts.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 204 Literary Analysis and Argumentation

An introduction to the techniques and terminology of close literary analysis and argumentation as applied to poetry, fiction, and drama. The course will include frequent demanding writing assignments and is designed for students beginning their major study in English.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 205 Survey of British Literature I

The study of British literature from the Old English period to Milton.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 206 Survey of British Literature II

The study of British literature from Dryden to the end of the 19th century.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 207 The English Language

The development of the English language from its Indo-European origins with emphasis on English phonology, morphology, syntax, and lexicography, as well as a study of traditional, structural, and transformational approaches to the language.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall, 3 credits

EGL 217 American Literature I

The study of American literature from 1607 to 1865.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 218 American Literature II

The study of American literature from 1865 to 1945.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 224 Modern English and American Literature

The study of English and American literature from the end of the Victorian era to World War II.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 226 Contemporary English and American Literature

The study of English and American literature from World War II to the present.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 241 Shakespeare I

A study of the comedies and the history plays. Designed to complement EGL 242. May not be taken for credit in addition to EGL 243.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall, 3 credits

EGL 242 Shakespeare II

A study of the tragedies and the romances. Designed to complement EGL 241. May not be taken for credit in addition to EGL 243.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Spring, 3 credits

EGL 243 Shakespeare: The Major Works

A study of major works in several genres. Designed for students who want a one-semester survey of Shakespeare. May not be taken for credit in addition to EGL 241 or 242.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 260 Mythology in Literature

The analysis of Mediterranean myth in literature from antiquity to the present. The course explores the earliest literary texts that use mythic material, analyzes the irrational in myth, and examines the history of motifs, figures, and themes in myth that persist in Western literature, with special emphasis on English literature.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 261, 262 The Bible as Literature

The study of literary forms and themes in the Bible. The Old and New Testaments will be treated in alternate semesters.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall (261) and spring (262), 3 credits each semester

EGL 265 Development of the Novel

A survey of major works and developments in the 18th- and 19th-century novel.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 266 The Modern Novel

A study of major works and developments in the modern novel. Crosslisted with CLT 266.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 272 The Scriptural and Classical Tradition

Readings in scriptural, classical, and some continental medieval literature essential for the study of later British and American literature. All readings are in English translation. Crosslisted with CLT 202.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Alternate years, 3 credits (not offered in 1986-87)

EGL 274 Black American Literature

A survey of 19th- and 20th-century Black American literature.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

EGL 276 Women and Literature

An examination of works written by or about women that studies the development and conception of women in drama, poetry, and fiction. May be repeated with permission of the Director of Undergraduate Studies as the subject matter varies.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination
Fall or spring, 3 credits

Note: For descriptions of EGL 285 and 286, see *Creative Writing*, below. For descriptions of EGL 287, 288, and 289, see *Journalism*, below.

Upper-Division Courses in Literature

These are advanced courses designed primarily for majors. They presuppose the capacity to elucidate prose and poetry of a variety of historical periods and the ability to write sustained expository commentary on the reading. In these courses students will engage in intensive reading and discussion and have the opportunity to develop an informed, independent critical perspective. *EGL 204 Literary Analysis and Argumentation* is strongly recommended for background and is a prerequisite in many courses.

Period Courses

These courses are directed toward an understanding of the various periods of English and American literature. They include study of both major and minor authors, with attention to developments in theme and style and consideration of intellectual and social history. Detailed course descriptions and reading lists are provided for each course before registration.

EGL 300 Old English Literature

The study of English literature from its beginnings to the 11th century.

Prerequisites: EGL 204 and 205
Fall or spring, 3 credits

EGL 302 Medieval Literature in English

Major authors, themes, and forms of British literature from the 13th to the early 16th century, generally excluding Chaucer.

Prerequisites: EGL 204 and 205

Fall or spring, 3 credits

EGL 304 Renaissance Literature in English

The study of English literature of the 16th century.

Prerequisites: EGL 204 and 205

Fall or spring, 3 credits

EGL 306 English Literature of the 17th Century

The study of English literature from the late Renaissance to the age of Dryden.

Prerequisites: EGL 204 and 205

Fall or spring, 3 credits

EGL 308 The Age of Dryden

The study of English literature of the Restoration period.

Prerequisites: EGL 204 and 205 or 206

Fall or spring, 3 credits

EGL 310 Neoclassical Literature in English

The study of English literature from about 1700 to 1790.

Prerequisites: EGL 204 and 205 or 206

Fall or spring, 3 credits

EGL 312 Romantic Literature in English

The study of English literature from the end of the neoclassical period to the Victorian Age, 1798-1832.

Prerequisites: EGL 204 and 206

Fall or spring, 3 credits

EGL 314 Victorian Literature

The study of English literature from the end of the romantic period to World War I.

Prerequisites: EGL 204 and 206

Fall or spring, 3 credits

EGL 316 American Colonial and Federal Writers

The study of American literature from its beginnings to about 1800.

Prerequisites: EGL 204 and 217

Fall or spring, 3 credits

EGL 318 19th-Century American Literature

Themes and trends in American literature from 1800 to 1900.

Prerequisites: EGL 204 and 217 or 218

Fall or spring, 3 credits

EGL 320 Literature of the Modern Period

An intensive study of modern British and American literature from the end of the 19th century to World War II.

Prerequisites: EGL 204 and 224

Fall or spring, 3 credits

Major Authors

These courses deal intensively with the work of one or two writers at a time. An author representative of a period is not likely to be treated more often than every other year. EGL 344 through 353 may be repeated for credit with permission of the Director of Undergraduate Studies as the subject matter differs.

EGL 338 Beowulf and Finnsburh

Translation and analysis of the Old English poems *Beowulf* and the *Finnsburh Fragment*. Consideration of Latin and Germanic backgrounds in literature, mythology, and archaeology.

Prerequisite: EGL 300

Spring, 3 credits

EGL 340 Chaucer

Prerequisites: EGL 204 and 205

Fall or spring, 3 credits

EGL 341 Special Studies in Shakespeare

Prerequisites: EGL 204 and 241 or 242 or 243

Fall or spring, 3 credits

EGL 342 Milton

Prerequisites: EGL 204 and 205

Fall or spring, 3 credits

EGL 344 Major Writers of the Renaissance Period in England

Prerequisites: EGL 204 and 205

Fall or spring, 3 credits

EGL 347 Major Writers of the Neoclassical Period in England

Prerequisites: EGL 204 and 205 or 206

Fall or spring, 3 credits

EGL 348 Major Writers of the Romantic Period in England

Prerequisites: EGL 204 and 206

Fall or spring, 3 credits

EGL 349 Major Writers of the Victorian Period in England

Prerequisites: EGL 204 and 206

Fall or spring, 3 credits

EGL 350 Major Writers of American Literature

Prerequisites: EGL 204 and 217 or 218 as appropriate

Fall or spring, 3 credits

EGL 352 Major Writers of Modern British and American Literature

Prerequisites: EGL 204 and 224

Fall or spring, 3 credits

EGL 353 Major Writers of Contemporary British and American Literature

Prerequisites: EGL 204 and 226

Fall or spring, 3 credits

Genre and Interdisciplinary Courses

These courses cover the various literary kinds and the relations between literature in English and other disciplines or literatures. Detailed information on course content is published by the English Department before registration each semester. Reading lists are also available in advance. Except for EGL 370, these courses may be repeated for credit with permission of the Director of Undergraduate Studies as the subject matter differs.

EGL 362 Poetry in English

The study of the development of form, theme, and language of poetry in English.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

EGL 364 Drama in English

The study of the development of plot, structure, character, setting, theme, and language of drama in English.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

EGL 366 Fiction in English

The study of the development of plot, structure, character, theme, and language of fiction in English.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

EGL 368 Prose in English

The study of the various forms of prose such as the essay, utopias, memoirs, autobiography, biography, and non-fictional narrative.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

EGL 370 Literary Criticism

Analytic survey of major texts in European and American literary theory and criticism.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

EGL 372 Literature in English and Its Relations to Other Literatures

The study of literature in English as it affects and is affected by other literatures.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

EGL 374 Literature in English and Its Relations to Other Disciplines

The study of literature in English as it affects and is affected by other disciplines, such as anthropology, science, sociology, the history of ideas, theology, and psychology.

Prerequisite: A literature course at the 200 level or higher

Schedule to be announced, 3 credits

Note: For description of EGL 385, see *Creative Writing*, below. For description of EGL 387, 388, and 393, 394, see *Journalism* below. For descriptions of EGL 396, 398, 450, and 454, see *Secondary Education*, below.

Special Studies in English

EGL 487 Independent Project

Intensive study of a special topic undertaken with close faculty supervision. May be repeated.

Prerequisite: Permission of instructor and Director of Undergraduate Studies
Fall and spring, 1 to 3 credits

EGL 488 Internship

Participation in local, state, and national public and private organizations. The work must involve skills related to the educational goals of the department. Students will be required to submit written progress reports and a final written report on their experience to the faculty sponsor and the department. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits. This course will not fulfill English major requirements.

Prerequisites: 12 credits of English; 2.5 G.P.A.; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

EGL 490 English Seminar

Advanced work in periods, genres, and authors of English and American literature will be offered in small classes. One or more seminars will be given each semester. The subject matter and its treatment as well as specific prerequisites for each section will be published in the department's brochure of course descriptions before advance registration in the previous semester. May be repeated for credit with the permission of the Director of Undergraduate Studies in English as the subject matter differs.

Prerequisite: Permission of instructor
Fall and spring, 3 credits

EGL 495, 496 Senior Honors

See description of the Honors Program in English above.

Prerequisite: Permission of department
Fall (495) and spring (496), 3 credits each semester

Creative Writing

EGL 285 Writing Workshop: Fiction

A workshop in the development of skills in writing fiction through practice supplemented by readings.

Prerequisite: Permission of instructor; EGC 101 or "Strong" on the English Placement Examination
Fall and spring, 3 credits

EGL 286 Writing Workshop: Poetry

A workshop in the development of skills in writing poetry. Poetry writing is supplemented by readings.

Prerequisite: Permission of instructor; EGC 101 or "Strong" on the English Placement Examination

Fall and spring, 3 credits

EGL 385 Advanced Creative Writing

A creative writing workshop. Students will receive detailed criticism of their work. This course may be repeated with permission of the Director of Undergraduate Studies.

Prerequisites: EGL 285 or 286; permission of instructor

Fall and spring, 3 credits

Journalism

For description of the minor in journalism, see alphabetical listing, *Journalism*, p. 134.

EGL 287 Newswriting I

Basic elements and issues of news stories. A short history of journalism and study of foreign, national, and local newspapers are included. News stories are written on standard subjects, such as crime, news conferences, and court proceedings.

Prerequisites: EGC 101 or "Strong" on the English Placement Examination; typing speed of at least 25 words per minute

Fall or spring, 3 credits

EGL 288 Feature Writing I

Reviews, interviews, humorous writing, and other forms of feature writing for newspapers and magazines are studied and written. A short history of magazines and readings in several periodicals are included.

Prerequisites: EGC 101 or "Strong" on the English Placement Examination; typing speed of at least 25 words per minute

Fall or spring, 3 credits

EGL 289 Readings in Journalism

The study of writing by journalists such as Mencken, Orwell, Dickens, and Tom Wolfe, as well as writings on topics such as racism in America, capital punishment, and ecology.

Prerequisite: EGC 101 or "Strong" on the English Placement Examination

Fall or spring, 3 credits

EGL 387 Newswriting II

Development of the techniques of writing news stories studied in Newswriting I. The emphasis will be on preparing stories requiring extensive research and investigation for actual submission to regional and national newspapers.

Prerequisite: EGL 287

Fall or spring, 3 credits

EGL 388 Feature Writing II

Development of the techniques of writing feature stories studied in Feature Writing I. The emphasis will be on feature stories

written for actual publication in regional and national magazines. Students will be required to do extensive research, rewriting, and editing of longer features than can be written in Feature Writing I.

Prerequisite: EGL 288

Fall or spring, 3 credits

EGL 393, 394 Practicum in Journalism

Provides actual working situations for journalists. Regular writing assignments—including some supervised off-campus work—are given, and student publications are discussed. Editing, editorial policy, beat coverage and organization, production, layout, and management will be studied and individual instruction given.

Prerequisites: EGL 287; permission of instructor

Fall (393) and spring (394), 3 credits each semester

Secondary Education

EGL 396 Literature and Psychology of Adolescence

The study of literary texts dealing with the subject of adolescence. Readings will be mostly 20th-century novels written about adolescents, and will be studied from various theoretical perspectives (e.g., Freudian, Eriksonian, Family Systems).

Prerequisite: One 200-level literature course
Fall or spring, 3 credits

EGL 398 Methods of Instruction in Literature and Composition

Consideration of specific problems in the teaching of English: e.g., posing questions about literary texts and commenting on student papers. There is frequent use of writing by secondary school students, and the goals of instruction in literature and language are examined. *Required of students seeking certification in secondary school English.*

Prerequisites: EGL 204 or 205 or 206; permission of department

Fall, 3 credits

EGL 450 Supervised Secondary School Student Teaching

Supervised practice teaching by arrangement with selected Long Island secondary schools. Applications must be filed in the semester preceding that in which the student plans to student teach. Satisfactory/Unsatisfactory grading only.

Prerequisites: Enrollment in English Teacher Preparation Program; permission of instructor
Corequisite: EGL 454

Fall and spring, 12 credits

EGL 454 Student Teaching Seminar

Seminar on problems and issues of teaching English at the secondary school level. Analysis of actual problems and issues encountered by the student in the student teaching experience.

Corequisite: EGL 450

Fall and spring, 3 credits

English as a Second Language

Coordinator

Susan Ansara

Teaching Assistants

Estimated number: 10

A variety of courses in English may be taken by students whose first language is not English. Ranging in level from elementary to advanced, these courses are designed to improve students' speaking, reading, writing, and comprehension of English and to enable students to participate more fully in their University program and American life.

These courses are open both to regularly enrolled Stony Brook students and to members of the community.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

ESL 186 Elementary Oral/Aural Skills (formerly EFL 186)

A course for students who speak little or no English. The sounds of English are presented systematically and language laboratory practice is required. Ear training is begun and strengthened through work in the listening laboratory. Students are taught communicative skills from the outset, and the emphasis is on speaking and being understood. May not count toward graduation.

Prerequisite: Departmental diagnostic test
Corequisites: ESL 187, 188, and 189
Fall and spring, 3 credits

ESL 187 Elementary Composition (formerly EFL 187)

A course designed for students with little or no previous training in writing English. Starting with basic sentence patterns, word order and parts of speech will be identified and taught as they relate to the production of a paragraph of written English. The course goal is to have students master simple and compound sentences and to begin to understand paragraph development. May not count toward graduation.

Prerequisite: Departmental diagnostic test
Corequisites: ESL 186, 188, and 189
Fall and spring, 3 credits

ESL 188 Elementary Reading Skills (formerly EFL 188)

For non-natives who have had little exposure to written English. Basic sentence structure and vocabulary will be studied in order to improve students' comprehension, from simplified reading texts to those of increasing complexity. Will also include some practical reading material such as instructions and schedules. May not count toward graduation.

Prerequisite: Departmental diagnostic test
Corequisites: ESL 186, 187, and 189
Fall and spring, 3 credits

ESL 189 Elementary Grammar (formerly EFL 189)

Introduction of basic English grammar, both oral and written, for non-native speakers. The material will reinforce what is taught in ESL 186, 187, and 188. Curriculum will include study of basic verb tenses, noun categories, and basic affirmative, negative, and interrogative sentence patterns. May not count toward graduation.

Prerequisite: Departmental diagnostic test
Corequisites: ESL 186, 187, and 188
Fall and spring, 3 credits

ESL 190 Intermediate Grammar (formerly EFL 190)

Introduction or review of intermediate-level grammar, both oral and written. The material will reinforce work done in EFL 191, 192, and 195. Curriculum will include verb tenses, compound/complex sentences, as well as some modals, participles, and gerunds.

Prerequisite: ESL 189 or departmental diagnostic test
Corequisite: ESL 191, 192, or 195
Fall and spring, 3 credits

ESL 191 Oral/Aural Skills (formerly EFL 191)

Students improve skills necessary for speaking and understanding English. Special emphasis on developing communication capabilities. Class work includes pronunciation, vocabulary development, guided conversation, and listening practice. Language and listening laboratories required.

Prerequisite: ESL 186 or departmental diagnostic test
Fall and spring, 3 credits

ESL 192 Intermediate Composition (formerly EFL 192)

A course for students who have attained a degree of fluency in speaking English but need additional training in reading and writing skills. Beginning with basic sentence patterns and working toward paragraph development and, eventually, longer themes, each student has the opportunity to practice many different varieties of writing. May be repeated but counts only once toward graduation.

Prerequisite: Permission of instructor, based on outcome of English Placement Examination
Fall and spring, 3 credits

ESL 193 Advanced Composition (formerly EFL 193)

Advanced training in writing for ESL students who need to concentrate on paragraph development. The first half of the semester deals with paragraph construction, stressing concepts of main thesis and supporting arguments. Some advanced grammar is reviewed, but the assumption is that basic structures and mechanics of writing have already been mastered. The second half of the semester stresses combining paragraphs into short compositions. Both descriptive and argumentative writing are practiced.

Prerequisite: ESL 192 or placement based on outcome of English Placement Examination
Fall and spring, 3 credits

ESL 195 Intermediate Reading Skills (formerly EFL 195)

Analysis of approximately college-level reading material on various topics for the purposes of comprehension and increased reading speed. The course focuses on vocabulary building, word forms, idioms, sentence and paragraph structure, and when and how to use a dictionary.

Prerequisite: ESL 188 or departmental diagnostic test
Fall and spring, 3 credits

ESL 196 Advanced Reading Improvement (formerly EFL 196)

Strategies for improving reading comprehension of university-level fiction and nonfiction, emphasizing techniques of critical reading, skimming and scanning, deriving meaning from context, and rhetorical devices. Provides preparation for verbal portions of standardized tests such as the Graduate Record Examination.

Prerequisite: ESL 195 or departmental diagnostic test
Fall and spring, 3 credits

ESL 197 Advanced Grammar (formerly EFL 197)

Review of complex grammar of English, both oral and written. Material will reinforce the work done in ESL 193 and 198 and is intended to supplement those courses. Topics will include all modals, indirect speech, conditional and subjunctive, sequence of tenses, and more, depending on the needs of the class. Students will work from an advanced grammar handbook as well as a workbook.

Prerequisite: ESL 190 or departmental diagnostic test

Corequisite: ESL 193 or 198
Fall and spring, 3 credits

ESL 198 Advanced Oral/Aural Skills and Accent Improvement (formerly EFL 198)

An advanced course in speaking and listening skills for non-native speakers of English. Work is done with individual problem sounds, stress, and intonation in order to help students modify their accent and make their speech more intelligible. Techniques of speaking before a group are taught to enable non-native speakers to feel more confident in participating in their other classes. Advanced work in American idioms

and grammar is usually included. Language laboratory work may be required by individual instructors. Especially useful for undergraduate and graduate students who need to make seminar presentations, and for graduates with teaching assistantships.
Prerequisite: Permission of instructor
Fall and spring, 3 credits

Federated Learning Communities

Program Director

James B. McKenna: Hispanic Languages and Literature.

Teaching Assistants

Estimated number: 3

Federated Learning Communities (FLC), an innovative approach to undergraduate education, offers programs designed to complement academic majors in supportive learning communities. FLC programs are designed primarily for second-year and upper-division students. Most FLC programs enable students to fulfill a substantial part of the College distribution requirements and thereby to bring *coherence* and *significance* to the range of courses outside their major. All the programs provide students with a guided introduction to the resources of the University. Successful completion of most FLC programs leads to an academic minor in the theme of the program.

FLC's unique structures offer Stony Brook students several challenging opportunities:

1. The opportunity to work together with a group of faculty members and students who have a shared interest and common focus of concern. The courses in which all FLC students are enrolled provide an academic basis on which a community of interest uniting faculty and students is built.
2. The opportunity for the coherent learning of an *integrated semester* in which all the courses address a single theme. Each FLC program offers two integrated semesters, each composed of three federated departmental courses and two specifically integrating activities, i.e., a one-credit Core Course and a variable-credit Program Seminar. Both are described below.
3. In the *Core Course* of each FLC program (usually numbered 325, 326, and 327) specific attention is given to the nature and relation of disciplines as they interact around the common theme. In some FLC programs this course is team-taught; in others the federated faculty plan in advance a coordinated effort to which they all contribute serially; in still others the course is taught by one faculty member who is familiar with the content of all the federated courses.
4. The *Program Seminar* (usually numbered 301 and 302) is a special course that assists students in synthesizing the material of their other courses. No separate material

or reading additional to that of the three federated courses on which it is based is assigned. The Program Seminar is like a discussion session with three courses rather than one as its base.

The Program Seminar is taught by special kinds of teachers, the *Master Learner* and the *Lewis Mumford Fellow* (named for the scholar whose interdisciplinary accomplishments reflect the philosophy of FLC). The Master Learner, selected from among outstanding teachers on the faculty, is a "master" in the sense of being already accomplished in one discipline and as a teacher; but he or she is a "learner" in the sense of going back to classes to study a new interdisciplinary field that he or she has never studied before. The Mumford Fellow, chosen in a University-wide competition among graduate students, is a younger interdisciplinary scholar with extraordinary promise as a teacher. The Master Learner and Mumford Fellow attend all the classes as students with the other students enrolled in the program. They draw on previous experience to bridge or mediate between the specialized knowledge of the faculty and the needs of the students. They assist students in learning how to learn and in assuming active responsibility for their education. With their aid, the Program Seminar becomes the

center of an academically based student community where students can reflect together, with all other students taking the same courses, on the significance and interrelation of the material of the semester.

5. Those who complete a minor in an FLC program can do advanced interdisciplinary work (numbered 487), sometimes independently under the direction of two of the federated faculty, and other times in a group under the direction of one of the federated faculty.
6. FLC programs are coordinated with departmental programs. In many cases, a substantial number of credits earned in an FLC program will be accepted toward the major program of the participating departments. Such arrangements in the past have been made with economics, history, humanities, liberal arts, philosophy, psychology, social sciences, and sociology.

Thus, for the student as yet uncommitted to a major or for the student contemplating a change of major or seeking awareness of how his or her major intersects and is complemented by other majors, FLC offers the opportunity to become acquainted in a short period of time with six different disciplines as they interact around a common theme. This exploration takes place within a structure set up to facilitate faculty-student and student-student contact. The academic diversity of the courses and the students in an FLC

community make it a *microcosm of the University* and thus a transition to a fuller understanding and participation in the University as a whole.

The structures of FLC are described in more detail in a brochure titled "The Best of Both Worlds." The brochure is available in the FLC Office.

Requirements for an Interdisciplinary Minor in the Federated Learning Communities

The requirements for an FLC minor differ slightly from one program to another. Roughly 19 credits, at least 9 of which must be at the upper-division level, are required in any program. The credits must be distributed as follows:

	<i>Credits</i>
A. Four or five of the six federated courses, three of which must be taken in the same semester	12-15
B. One, two, or three credits of the Program Seminar, which must be taken only in the semester in which the three federated courses are taken	1-3
C. One, two, or three credits of the Core Course	1-3
D. Additional credits up to the total required for the minor to be earned in an interdisciplinary study project under the direction of two faculty members teaching in the FLC program. Successful completion of requirements A, B, and C above and permission of the instructor are prerequisites for enrollment in this activity	3-6

Current Programs

Detailed information on current FLC programs—the dates, the courses, and the requirements—are available in the FLC office. FLC staff members will work with students to devise a long-range plan for fitting an FLC minor into their schedules.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Note: Courses for individual programs are described in detail in separate brochures available from the FLC office.

FLC 475 Teaching Practicum

Supervised participation with Master Learners in the teaching of the Program Seminars of the Federated Learning Communities. The student and his or her supervising Master Learner will meet weekly with enrolled students for the preparation of seminar meetings. Responsibilities will include researching material appropriate for seminar discussions, helping students with interdisciplinary research papers, placing students with similar intellectual interests or projects in touch with each other, or responding to journals. Students will be invited to attend FLC's bimonthly seminar for all Master Learners and Mumford Fellows.

Prerequisites: Completion of an FLC minor with excellent performance in Program Seminar and Core Course; interview; permission of instructor
Corequisites: At least two courses federated with the Program Seminar.
Fall and spring, 3 credits

Foreign Languages Secondary Teacher Preparation Program

Program Advisor

Ferdinand A. Ruplin: Germanic and Slavic Languages and Literatures

Requirements

In addition to fulfillment of the requirements for the major in French, German, Italian, Russian, or Spanish, prospective student teachers of foreign languages are required to take the

following courses in order to satisfy all requirements for State provisional certification:

	<i>Credits</i>
A. SSI 350 Foundations of Education	3
B. SSI 265 Drug and Alcohol Education	1
C. FLA 339 Methods and Materials in the Teaching of Foreign Languages	3

D. FLA 340 Curriculum Development and Micro-Teaching	3
E. FLA 450 Supervised Student Teaching	12
F. FLA 454 Student Teaching Seminar	3
Total	25

Prospective student teachers are also urged to take as many advanced language courses as possible through the semester prior to student teaching. For further information, students are asked to consult with departmental advisors. All questions concerning application for student teaching and requirements for certification are to be directed to the Program Advisor.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

FLA 339 Methods and Materials in the Teaching of Foreign Languages

A review of methods and materials for the teaching of foreign languages and literatures in the secondary schools, including a survey of audiolingual techniques and other recent developments. Special attention will be given

to the problems and purposes of the teaching of foreign languages at the high school level.

Prerequisites: Foreign language major; at least one 300-level language course; at least one 300-level literature course

Fall and spring, 3 credits

FLA 340 Curriculum Development and Micro-Teaching

This course is designed to train future language teachers in the development of well-articulated programs in secondary schools. Through mini- and micro-teaching, students will have the opportunity to enjoy clinical experiences in the actual classroom each week for at least two hours. Clinical experiences will be discussed in a weekly seminar.

Prerequisite: FLA 339

Spring, 3 credits

FLA 450 Supervised Student Teaching—Languages

Prospective foreign language teachers at the secondary level receive extensive practice under selected cooperating teachers. Student teachers work with one or two certified foreign-language teachers in one school each regular school day for the entire semester. Frequent consultations with University faculty members are designed to assist the student. Applications must be filed with the Teacher Training Office of the Department of Germanic and Slavic Languages and Literatures two months prior to student teaching. Satisfactory/Unsatisfactory grading only. Not for major credit.

Prerequisites: FLA 339 and 340; a 3.0 grade point average in the major; a 2.75 grade point average overall

Corequisite: FLA 454

Fall and spring, 12 credits

FLA 454 Student Teaching Seminar

Seminar on problems encountered by student teachers and public school teachers at the secondary level in foreign language teaching. Study and analysis of the many aspects of the foreign language teaching profession, such as individualized teaching, audiolingual training, use of audio-visuals, testing, and professional organizations.

Prerequisites: FLA 339 and 340

Corequisite: FLA 450

Fall and spring, 3 credits

Department of French and Italian

Professors

Harriet Allentuch, Ph.D., Columbia University: 17th-century French literature.

Konrad Bieber, Ph.D., Yale University: 18th-century and contemporary French literature; comparative literature.

Frederick Brown, Ph.D., Yale University: 19th- and 20th-century French literature.

Linette Brugmans, Emeritus, Ph.D., New York University: 19th- and 20th-century French literature.

Oscar A. Haac, Ph.D., Yale University: 18th- and 19-century French literature; comparative literature.

G. Norman Laidlaw, Emeritus, Ph.D., Columbia University: 18th- and 20th-century French literature.

Mario Mignone, Director of Graduate Studies, Ph.D., Rutgers University: Contemporary Italian literature.

D. Sandy Petrey, Ph.D., Yale University: 19th-century French literature.

Joseph A. Tursi, Emeritus, Ph.D., New York University: 18th-century Italian literature. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974-75.

Mark S. Whitney, Ph.D., University of Pennsylvania: 16th-century French literature.

Eleonore M. Zimmermann, Ph.D., Yale University: 17th-, 19th-, and 20-century French literature; comparative literature.

Associate Professors

Carol Blum, Director of Undergraduate Studies, Ph.D., Columbia University: 18th-century French literature.

Charles Franco, Ph.D., Rutgers University: Italian medieval literature.

Leonard R. Mills, Emeritus, Ph.D., Columbia University: Medieval French literature; paleography.

Anthony Rizzuto, Ph.D., Columbia University: 19th- and 20th-century French literature.

Assistant Professors

George Carpetto, Ph.D., Rutgers University: 15th-century Italian humanism; romanticism.

Luigi Fontanella, Ph.D., Harvard University: Italian modern literature.

Jeanine M. Goldman, Ph.D., Fordham University: French language; 19th-century French literature.

Gisele Kapuscinski, Ph.D., Columbia University: Linguistics; French theatre.

Elizabeth P. Riggs, Ph.D., Columbia University: Medieval French language and literature; 20th-century literature. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974-75

Teaching Assistants:

Estimated number: 10

The Department of French and Italian offers a diversified program that meets the needs of all students interested in the study of French or Italian. Those wishing to major in either or both languages are offered several possible concentrations, each structured to assist students preparing for future careers or advanced study. The department also offers a minor in each language and a variety of courses of interest to non-majors, some in translation (see FRN 381 and ITL 381), some in the original language with reduced prerequisites.

Requirements for the Majors

A student wishing to major in either French or Italian may choose between two concentrations in each. These concentrations are designed to allow maximum flexibility in the students' programs and to fulfill their varying needs and interests. All require as a basis a solid preparation in the language of the major. Students will choose one of the concentrations offered according to whether they wish to acquire a general humanistic background or to prepare for graduate study in literature (Concentration A); whether they wish to prepare for teaching on the secondary school level (Concentration A); whether they wish to prepare for work in law, government, international relations, business, banking, hotel management, etc.; or translation and interpretation (Concentration A or B).

Note: All students should consult with the appropriate departmental advisors. Students opting for Concentration B in French must obtain departmental approval for their program by submitting it in advance, after consultation with the advisor, to the Director of Undergraduate Studies or the Chairperson. In order to complement the major in French or Italian, students will be encouraged to take upper-division courses in related fields: English, history, art, music, etc. All courses in the major must be taken for a letter grade.

French

The major in French leads to the Bachelor of Arts degree. The following courses are required.

A. Concentration in Language and Literature

	<i>Credits</i>
1. Required courses for a total of 18 credits:	
a. Language courses	
FRN 221 Conversation and Composition	3
FRN 222 Introduction to Stylistics	3
FRN 321 Phonetics and Diction	3
FRN 322 Stylistics	3
b. Literature courses	
FRN 295, 296 Readings in French Literature: Analysis and Interpretation	6
2. Elective courses: 18 additional credits in courses beyond FRN 295, 296, of which 12 credits must be in literature	18
Total	36

B. Concentration in French and a Second Discipline

	<i>Credits</i>
1. Required courses for a total of 30 credits:	
FRN 221 Conversation and Composition	3
FRN 222 Introduction to Stylistics	3
FRN 295, 296 Readings in French Literature: Analysis and Interpretation	6
FRN 320 Practical French	3
FRN 321 Phonetics and Diction	3
FRN 322 Stylistics	3
One course in French literature numbered 301 or above	3
FRN 390 French Civilization	3
FRN 447 Directed Readings in French in the student's second discipline (to be undertaken after completion of FRN 322 and 390)	3

2. Elective courses:
12 additional credits (nine of which must be at the 300-level) to be chosen

with the help of the designated advisor and approved by the department. Students will normally choose a sequence of four courses in a department or program other than French and Italian.

12

Total 42

Italian

The major in Italian leads to the Bachelor of Arts degree. The following courses are required.

A. Concentration in Language and Literature

	<i>Credits</i>
1. Required courses for a total of 15 credits:	
a. Language courses	
ITL 221, 222 Conversation and Composition I, II	6
ITL 321 Advanced Conversation and Composition I	3
b. Literature courses	
ITL 295, 296 Introduction to Italian Literature I, II	6
2. Elective courses: 18 additional credits in courses beyond ITL 295, 296, of which 12 credits must be in literature	18
Total	33

B. Concentration in Italian and a Second Discipline

	<i>Credits</i>
1. Required courses for a total of 30 credits:	
ITL 221, 222 Conversation and Composition I, II	6
ITL 295, 296 Introduction to Italian Literature I, II	6
ITL 320 Practical Italian	3
ITL 321, 322 Advanced Conversation and Composition I, II	6

One course in Italian literature numbered 300 or above	3
ITL 390 The Italian Scene	3
ITL 447 Directed Readings in Italian in the student's second discipline (to be undertaken after completion of ITL 322 and 390)	3
2. Elective courses: 12 additional credits (nine of which must be at the 300 level) to be chosen with the help of the designated advisor and approved by the department. Students will normally choose a sequence of four courses in a department or program other than French and Italian	12
Total	42

Notes: Students whose language proficiency is such that they can be exempted from ITL 221, 222 may apply, and are strongly urged to do so, to have a course in art, music, history, or other languages count for major credit.

Students who wish to offer their native language as the main area of concentration will be asked to replace 221, 222, 320, and 321 by English courses appropriate to their level of proficiency in that language.

Teacher Training Program

Students who wish to prepare for certification as secondary school teachers of French or Italian or both should consult appropriate departmental advisors concerning requirements and procedures for the teacher preparation program. All students will be required to take FLA 339 and FLA 340 among the four courses in education required by the State Education Department. See also alphabetical listing, *Foreign Languages Secondary Teacher Preparation Program*.

Honors Program in French and Italian

To be eligible to participate in the honors program, departmental majors must have an overall average of 3.0 and an average of 3.5 in French or Italian through the junior year. An eligible student wishing to write a senior thesis must find a faculty member of

the department to act as thesis advisor. The student, with the approval of this advisor, must submit a proposal of a project in writing to the department. Deadline for submission of the proposal for fall semester is April 30 and for spring semester is November 30. Final selection of candidates and topics will be determined by an Honors Committee of the Department of French and Italian. Students selected for the program must enroll in FRN or ITL 495 for the semester in which the thesis is written. The thesis will be evaluated by the thesis advisor, another member of the French or Italian faculty, and a third reader from outside the department. For further information consult the Director of Undergraduate Studies.

Requirements for the Minors

The Department of French and Italian also offers a minor in each language. There are two emphases in both languages: one in language and one in literature.

Minor in French

	<i>Credits</i>
A. Emphasis on Language Required courses: FRN 192, 221, 222, 295 or 296, 320, 321, 322, 390 <i>Note:</i> A literature course may be substituted for FRN 320	24
or	
B. Emphasis on Literature Required courses: FRN 192, 221, 222, 295, 296 Electives: Three literature courses from 301 to 394	15 9
Total	24

Minor in Italian

	<i>Credits</i>
A. Emphasis on Language Required courses: ITL 192, 221, 222, 295 or 296, 320, 321, 322, 390 <i>Note:</i> Literature courses may be substituted for ITL 222 or 320 or both.	24
or	
B. Emphasis on Literature Required courses: ITL 192, 221, 222, 295, 296 Electives: Three literature courses on the 300 level	15 9
Total	24

All courses are to be taken for a letter grade.

Study Abroad

The Department of French and Italian sponsors study abroad programs in Avignon, France, and in Rome, Italy, during the academic year and the summer. For the summer program, students may earn three to six credits. These programs are available to all students of French and Italian, both majors and non-majors.

The department also encourages qualified students to consider the program sponsored by the Department of Philosophy at the University of Paris, IV, The Sorbonne.

Consult appropriate departmental advisors for these programs.

Placement

Entering students who wish to continue the study of French or Italian started in high school should consult a departmental advisor to help them in the choice of the appropriate course.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

French Language and Literature

FRN 111, 112 Elementary French I, II

An introduction to spoken and written French, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory will supplement class work. No student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for FRN 111 without written permission from the supervisor of the course.
Fall (111) and spring (112), 4 credits each semester

FRN 113 Elementary French (An Intensive Course)

An intensive course covering the elementary French program (FRN 111, 112) in one semester. No student who has had two or more years of French in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for this course without written permission from the

supervisor of the course. May not be taken for credit after FRN 111 or any other course in French.
Spring, 6 credits

FRN 191, 192 Intermediate French I, II

An intermediate course in conversation, composition, and the interpretation of French texts.

Prerequisite: FRN 112 or 113

Fall (191) and spring (192), 3 credits each semester

FRN 195 Intermediate French (An Intensive Course)

Review of grammar and discussion of simple French texts through reading, writing, and discussion. Language laboratory will supplement class work.

Prerequisite: FRN 112 or 113

Fall, 6 credits

FRN 221 Conversation and Composition

A course in the active use of spoken and written French. Language laboratory will supplement class work.

Prerequisite: FRN 192 or 195

Fall, 3 credits

FRN 222 Introduction to Stylistics

Reading of selected short passages of prose and poetry in class with emphasis on improved writing skills, oral expression, and increased mastery of French syntax and techniques of literary analysis.

Prerequisite: FRN 221

Spring, 3 credits

FRN 225 French Drama Workshop

The development of self-expression and effective communication in French through the medium of the theatre. Students will participate in theatrical exercises and improvisations, scene and play analysis, writing dialogues for the stage. The second half of the course will be devoted to rehearsing a play for performance before an audience. Meetings beyond the regular class schedule may be required.

Prerequisites: FRN 221 or four years of high school French; permission of instructor

Fall or spring, 3 credits

FRN 295, 296 Readings in French Literature: Analysis and Interpretation

These courses will teach literary analysis and its application to representative texts chosen from various periods of French literature. All readings will be done in French. Discussions will be in French.

Prerequisite: FRN 222

Fall (295) and spring (296), 3 credits each semester

FRN 301 The French Novel

A study of the nature and development of the novel from its beginnings to the present with special attention to the stylistic and thematic aspects of the works considered.

Prerequisite: FRN 222 or 295

Fall or spring, 3 credits

FRN 302 The French Comedy from Moliere to Ionesco

The study of the comic tradition from Moliere to the contemporary theatre.

Prerequisite: FRN 222 or 295

Fall or spring, 3 credits

FRN 320 Practical French

A course designed for students who wish to become more proficient in reading, writing, and translating French. Students will also be trained in the use of French in business, in administration, and in everyday professional life. Emphasis will be placed on the idiomatic peculiarities of the French language and the relation of French to the structure of English.

Prerequisite: FRN 222

Fall or spring, 3 credits

FRN 321 Phonetics and Diction

A course designed to develop mastery of the spoken language. Students will learn to express themselves in the current idiom with fluency and accuracy. At least one hour of laboratory will be required weekly.

Prerequisite: FRN 221 or 295 or 296

Fall or spring, 3 credits

FRN 322 Stylistics

A course designed to acquaint students with the subtleties of French grammar and style. Extensive practice in composition and in translation from English to French.

Prerequisite: FRN 222 or 295 or 296

Fall or spring, 3 credits

FRN 323 Advanced French Conversation

A course designed to develop and maintain complete fluency in the language.

Prerequisite: FRN 221 or 295 or 296

Fall or spring, 3 credits

Further Studies in French Literature

The specific topics of FRN 333, 343, 351, 361, and 373 will appear in the Class Schedule and a description of the specific contents will be available in the department each semester. These courses may be repeated for credit with permission of the department as the subject matter differs. FRN 222 and FRN 295 or 296 are prerequisites for these courses.

FRN 333 Studies in Renaissance Literature

Schedule to be announced, 3 credits

FRN 343 Studies in 17th-Century Literature

Schedule to be announced, 3 credits

FRN 351 Studies in 18th-Century Literature

Schedule to be announced, 3 credits

FRN 361 Studies in 19th-Century Literature

Schedule to be announced, 3 credits

FRN 373 Studies in 20th-Century Literature

Schedule to be announced, 3 credits

FRN 381 French Literature in Translation

A course given in translation on a major French author or literary movement, designed primarily to give students in other disciplines an opportunity to become acquainted with the French tradition. Majors will be admitted by special permission of their advisors, and will do the reading and term papers in French. May not be used toward satisfaction of the foreign language proficiency requirement.

Prerequisites: Two literature courses

Schedule to be announced, 3 credits

FRN 390 French Civilization

A discussion of French civilization from the creation of the modern state to the present. The course is intended for those interested in studying the background and traditions of modern France. An anthology of historical texts and documents will serve as a point of departure; the institutions and life in France will be considered, along with the development of art, architecture, music, and literature. The emphasis will be on discussion (in French) and individual projects. Visiting lecturers will contribute to the variety of topics and points of view.

Prerequisites: FRN 222; 295 or 296

Fall or spring, 3 credits

FRN 393 Free Seminar

Free seminars are frequently built around themes like "Women in French Literature," "Self-Deception in the 17th-Century *Moralistes* and the 20th-Century Novel," and "The City in the French Novel." A detailed description of the seminar may be obtained from the department. May be repeated.

Prerequisite: Permission of department

Schedule to be announced, 3 credits

FRN 447 Directed Readings in French

Individually supervised readings in selected topics of French language and literature or, alternatively for the purpose of developing French vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of department

Fall and spring, 1 to 6 credits

FRN 475 Undergraduate Teaching Practicum in French

Each student will conduct a regular problem or tutorial section that will supplement a regular language course under the guidance of a master teacher. Responsibilities may include preparing material for discussion, initial correction of homework and tests, and helping students with problems. Satisfactory/Unsatisfactory grading only. *Prerequisites:* Fluency in French; permission of instructor
Fall and spring, 3 credits

FRN 495 Senior Honors Project in French

A one-semester project for seniors. Arranged in consultation with the department, the project involves the writing of a paper under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors will take this course. *Prerequisite:* Permission of department
Fall and spring, 3 credits

Italian Language and Literature**ITL 111, 112 Elementary Italian I, II**

An introduction to spoken and written Italian, stressing pronunciation, speaking, comprehension, reading, and writing. Selected texts will be read. Practice in language laboratory supplements class work. No student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for ITL 111 without written permission from the supervisor of the course.
Fall (111) and spring (112), 4 credits

ITL 113 Intensive Elementary Italian

An intensive course covering the elementary Italian program (ITL 111, 112) in one semester. No student who has had two or more years of Italian in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for this course without written permission from the supervisor of the course. May not be taken for credit after ITL 111 or any other course in Italian.
Fall, 6 credits

ITL 191, 192 Intermediate Italian

An intermediate course in the reading and discussion of selected Italian texts. An intensive grammar review will offer an opportunity to develop conversational ability. *Prerequisite:* ITL 112 or 113
Fall (191) and spring (192), 3 credits each semester

ITL 195 Intensive Intermediate Italian

An intensive course covering the intermediate Italian program (ITL 191, 192) in one semester. *Prerequisite:* ITL 112 or 113
Spring, 6 credits

ITL 221 Italian Conversation and Composition I

A course in spoken and written Italian, with emphasis on precision and fluency in the spoken form. *Prerequisite:* ITL 192 or 195
Fall, 3 credits

ITL 222 Italian Conversation and Composition II

A course in spoken and written Italian, with emphasis on precision in written form. *Prerequisite:* ITL 221
Spring, 3 credits

ITL 295 Introduction to Italian Literature I

Readings and discussions of representative writers in Italian literature of the 19th and 20th centuries. This course is designed to introduce students to the main currents of Italian literature through analysis of literary texts. *Prerequisite:* ITL 222
Fall, 3 credits

ITL 296 Introduction to Italian Literature II

Readings and discussions of representative texts chosen from various periods of Italian literature from the 13th through the 18th centuries. *Prerequisite:* ITL 222
Spring, 3 credits

ITL 320 Practical Italian

A course designed for students who wish to become more proficient in reading, writing, and translating Italian. Students will also be trained in the use of Italian in business, in administration, and in everyday professional life. Emphasis will be placed on the idiomatic peculiarities of the Italian language and the relation of Italian to the structure of English. *Prerequisite:* ITL 222
Fall or spring, 3 credits

ITL 321 Advanced Conversation and Composition I

This course intends to develop fluency and accuracy in the use of the spoken language through intensive practice, exposition, class discussion, and the use of the language laboratory. *Prerequisite:* ITL 222
Fall or spring, 3 credits

ITL 322 Advanced Conversation and Composition II

A course designed to acquaint students with the subtleties of Italian grammar and style. Extensive practice in composition and in

translation from English to Italian. *Prerequisite:* ITL 222
Fall or spring, 3 credits

ITL 324 History of the Italian Language

A survey of the development of the Italian language from its origin to the present day. *Prerequisite:* ITL 222
Fall or spring, 3 credits

ITL 325 Italian and Its Dialects

An examination of the Italian dialects within the larger framework of Romance language development, particularly through primary texts (medieval to modern) in various Italian dialects. *Prerequisite:* ITL 222
Fall or spring, 3 credits

Further Studies in Italian Literature

The specific topics of ITL 329, 330, 331, 351, 361, and 373 will appear in the Class Schedule, and a description of the specific contents will be available in the department each semester. These courses may be repeated for credit with permission of the department as the subject matter differs. ITL 222, and 295 or 296 are prerequisites for these courses.

ITL 329, 330 Studies in 13th- and 14th-Century Literature

Schedule to be announced, 3 credits

ITL 331 Studies in 15th- and 16th-Century Literature

Schedule to be announced, 3 credits

ITL 351 Studies in 18th-Century Literature

Schedule to be announced, 3 credits

ITL 361 Studies in 19th-Century Literature

Schedule to be announced, 3 credits

ITL 373 Studies in Contemporary Literature

Schedule to be announced, 3 credits

ITL 381 Italian Literature in Translation

A course given in translation on a major Italian author or literary movement, designed primarily to give students in other disciplines an opportunity to become acquainted with the Italian tradition. Majors will be admitted by special permission of their advisors, and will do the reading and term papers in Italian. May not be used toward satisfaction of the foreign language proficiency requirement. *Prerequisites:* Two literature courses
Schedule to be announced, 3 credits

ITL 390 The Italian Scene

The reality of Italy and the Italian people through a study of the evolution of the historical, cultural, political, and social character of the nation. This course will be taught in Italian.

Prerequisite: ITL 222 or 295 or 296
Fall or spring, 3 credits

ITL 393 Free Seminar

Seminars built around a theme such as "Cities in Italian Literature," "Women in Italian Literature," "Death and Resurrection in Contemporary Italian Literature," and "Sin and Sensuality in the Italian Short Story." A detailed description of the seminar may be obtained from the department for each semester it is offered.

Prerequisite: ITL 222
Schedule to be announced, 3 credits

ITL 447 Directed Readings in Italian

Individually supervised readings in selected topics of Italian language and literature or, alternatively for the purpose of developing Italian vocabulary in a secondary field, in selected topics in the humanities, social sciences, or natural sciences. May be repeated.

Prerequisite: Permission of department
Fall and spring, 1 to 6 credits

ITL 475 Undergraduate Teaching Practicum in Italian

Each student will conduct a regular problem or tutorial section that will supplement a regular language course under the guidance of a master teacher. Responsibilities may include preparing material for discussion, initial correction of homework and tests, and helping students with problems. Satisfactory/Unsatisfactory grading only.

Prerequisites: Fluency in Italian; permission of instructor
Fall and spring, 3 credits

ITL 495 Senior Honors Project in Italian

A one-semester project for seniors. Arranged in consultation with the department, the project involves the writing of a paper, under the close supervision of an appropriate instructor, on a suitable topic. Students who are candidates for honors will take this course.

Prerequisite: Permission of department
Fall and spring, 3 credits

Department of Germanic and Slavic Languages and Literatures

Professors

Edward J. Czerwinski, Ph.D., University of Wisconsin: Comparative Slavic literature; Slavic drama and theatre; Polish literature; Russian literature. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74

Barbara Elling, Ph.D., New York University: Romanticism; literature and sociology; methods of language teaching. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1972-73

Roman Karst, Emeritus, LL.M., Jagiellonian University, Cracow: Goethe; modern novel; Kafka; Mann.

Leif Sjoberg, Ph.D., Uppsala University: Scandinavian literature; Ibsen, Strindberg, Lagerkvist, Ekelof; Old Norse.

Associate Professors

Samuel Berr, Ph.D., New York University: Historical linguistics; Old Saxon; Yiddish language and literature. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74

Russell E. Brown, Ph.D., Harvard University: Modern German literature; Expressionist poetry; Trakl, Brecht, Jahn.

Ferdinand A. Ruplin, Ph.D., University of Minnesota: Applied linguistics; Middle High German; computer-assisted instruction.

John R. Russell, Chairperson, Ph.D., Princeton University: Rococo; novella; computer-assisted instruction.

Lucy E. Vogel, Ph.D., New York University: Contemporary Russian culture; Russian literature of 19th and 20th centuries.

Assistant Professors

Christina Y. Bethin, Ph.D., University of Illinois, Urbana: Slavic linguistics; Russian, Polish, and Ukrainian languages. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1982-83

Thomas A. Kerth, Ph.D., Yale University: Medieval literature; Middle High German; philology.

Andreas Mielke, Ph.D., Yale University: 18th- and 19th-century German literature; literary theory.

Daniel C. O'Neil, Emeritus, Ph.D., Cornell University: Literature and the visual arts; Barlach; problems of translation.

Nicholas Rzhnevsky, Ph.D., Princeton University: Russian and Soviet literature; literary theory; Russian theatre; Russian intellectual history.

Lecturers

Ursula Meyer, Adjunct, Staatsexamen, University of Hamburg: Foreign language pedagogy.

Teaching Assistants

Estimated number: 10

Requirements for the Major in German

The major in German leads to the Bachelor of Arts degree. The following courses are required:

	<i>Credits</i>
1. GER 199 German Civilization and Culture (in English)	3
2. GER 200 Landeskunde (in English)	3
3. GER 201 Contrastive Structures of German and English	3
4. GER 203 Introduction to Germanic Studies	3
5. GER 204 Survey of German Literature	3
6. GER 221, 222 German Conversation and Composition	6

7. GER 301 German Drama	3
8. GER 302 German Prose	3
9. GER 303 German Poetry	3
10. GER 304 Goethezeit	3
11. GER 338 History of the German Language	3
Total	36

Notes: All courses offered to fulfill major requirements must be taken for a letter grade. All upper-division courses in German must be passed with a grade of C or higher (not C-). Transfer students must complete at least 18 credits toward the major at Stony Brook.

The ascending numbers of the required options for the major are simply intended to suggest the sequence in which they might be studied most favorably; GER 199-204 are to be regarded as pre- or corequisites to the courses beyond 204.

Requirements for the Minor in German

For students majoring in other disciplines, a German minor is available with three choices of emphasis. In all three cases, all upper-division courses in German offered to fulfill minor requirements must be passed with a grade of C or higher (not C-). At least nine of the upper-division minor credits must be earned at Stony Brook.

A. Emphasis on German Language

	<i>Credits</i>	
1. GER 199 German Civilization and Culture (in English)	3	
2. GER 200 Landeskunde (in English)	3	
3. GER 201 Contrastive Structures of German and English	3	
4. GER 221, 222 German Conversation and Composition	6	
5. GER 321, 322 Advanced German Conversation and Composition	6	
6. GER 338 History of the German Language	3	
Total	24	

B. Emphasis on German Language and Literature

	<i>Credits</i>	
1. GER 199 German Civilization and Culture	3	
2. GER 203 Introduction to Germanic Studies	3	
3. GER 204 Survey of German Literature	3	
4. GER 221, 222 German Conversation and Composition	6	
5. GER 301 German Drama	3	
6. GER 302 German Prose	3	
7. GER 303 German Poetry	3	
Total	24	

C. Emphasis on German Language and Area Studies

	<i>Credits</i>	
1. GER 199 German Civilization and Culture (in English)	3	
2. GER 200 Landeskunde (in English)	3	
3. GER 201 Contrastive Structures of German and English	3	
4. GER 221, 222 German Conversation and Composition	6	
5. GER 338 History of the German Language	3	
6. HIS 311 The Rise of Imperial Germany, 1806-1890	3	
7. HIS 312 From Empire to Third Reich: Germany, 1890-1945	3	
Total	24	

Requirements for the Major in Russian

The major in Russian leads to the Bachelor of Arts degree. The following courses are required:

	<i>Credits</i>	
1. RUS 141, 142 Masterpieces of Russian Literature	6	
2. RUS 221, 222 Russian Conversation and Composition	6	
3. One additional course chosen from among: RUS 291 Special Author in Translation RUS 292 Special Genre or Period in Translation EEL 293 Contemporary Slavic Culture	3	

4. RUS 321, 322 Advanced Conversation and Composition	6	
5. RUS 323 Russian Literary Texts	3	
6. RUS 302 History of the Russian Language or RUS 339 Structure of Russian	3	
7. RUS 490 Senior Seminar	3	
8. One additional upper-division course in Russian literature chosen in consultation with the departmental advisor	3	
Total	33	

Note: All courses must be taken for a letter grade. All upper-division courses in Russian must be passed with a grade of C or higher.

The department recommends that majors take related courses in the Slavic area such as HIS 209 Imperial Russia and HIS 210 Soviet Russia. Students planning advanced work in Russian are strongly urged to take one year of a second Slavic language.

Students interested in a double major are encouraged to consult with the departmental advisor.

Requirements for the Minor in Russian

For students majoring in other disciplines, a Russian minor is available with two choices of emphasis. In both cases, all courses must be taken for a letter grade.

A. Emphasis on Russian Literature

	<i>Credits</i>	
1. RUS 141, 142 Masterpieces of Russian Literature in Translation	6	
2. RUS 221, 222 Russian Conversation and Composition	6	
3. RUS 321 Advanced Russian Conversation and Composition	3	
4. RUS 323 Russian Literary Texts	3	
5. Two additional upper-division literature courses chosen in consultation with the departmental advisor	6	
Total	24	

B. Emphasis on Russian Language

	<i>Credits</i>
1. RUS 141 or 142 Masterpieces of Russian Literature in Translation	3
2. RUS 221, 222 Russian Conversation and Composition	6
3. RUS 321, 322 Advanced Conversation and Composition	6
4. RUS 302 History of the Russian Language	3
5. RUS 339 Structure of Russian	3
6. One additional upper- division course chosen in consultation with the departmental advisor	3
<hr/> Total	<hr/> 24

Study Abroad

The department encourages both majors and minors to complete some of their coursework abroad in the junior or senior year. SUNY maintains exchange programs with the Federal Republic of Germany (Tubingen, Wurzburg), Austria (Graz), Poland (Krakow, Poznan, Warsaw, Wroclaw), and the Soviet Union (Moscow).

Teacher Preparation

Students who wish to prepare for certification as secondary school teachers of German or Russian should consult appropriate departmental advisors. Those seeking certification in German are urged to take, in addition to the courses required for certification, GER 338 and 321, 322. Students of Russian are urged to take RUS 339 and 302.

See also alphabetical listing: Foreign Languages Secondary Teacher Preparation Program.

Placement in Language Courses for Incoming Students

The prerequisites for courses listed below indicate approximate placement levels. One year of high school foreign language is generally considered the equivalent of one college semester. Students are advised to consult the Director of Undergraduate Studies if they feel that the recommended course is inappropriate.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Germanic Languages and Literatures

GER 111, 112 Elementary German I, II

An introduction to spoken and written German, stressing pronunciation, speaking, comprehension, reading, writing, and culture. The course consists of one hour of lecture, three hours in a small section conducted in German, and one laboratory hour. No student who has had two or more years of German in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for GER 111 without written permission from the supervisor of the course.

Fall (111) and spring (112), 4 credits each semester

GER 141 German Literature in Translation (formerly GER 200)

A representative selection of works from major German authors in translation. May not be used to satisfy the foreign language proficiency requirement.

Fall or spring, 3 credits

GER 191, 192 Intermediate German I, II

The reading and interpretation of a wide variety of German texts, with a review of German grammar, composition, and conversation. Work in the language laboratory will further develop audiolingual skills.

Prerequisite: GER 112

Fall (191) and spring (192), 3 credits each semester

GER 195 Intensive Intermediate German

An intensive course covering the intermediate German program (GER 191, 192) in one semester.

Prerequisite: GER 112

Fall, 6 credits

GER 199 German Civilization and Culture (In English)

An introduction to the history and culture of the German-speaking areas (East and West Germany, Austria, and Switzerland) with an emphasis on the post-World War II period. The course, offered in English, is team taught by members of the department and guest speakers and is suitable for both German majors and non-majors. May not be used to satisfy the foreign language proficiency requirement.

Fall, 3 credits

GER 200 Landeskunde (In English)

Cultural and physical geography of Central Europe with emphasis on the German-speaking areas. Particular emphasis will be placed on the definition of cultural

units and their reflections in regionalism and particularism. The course will be conducted in English, but German reference materials will be used. May not be used to satisfy the foreign language proficiency requirement.

Prerequisite: GER 112

Spring, 3 credits

GER 201 Contrastive Structures of German and English

A detailed descriptive analysis of modern German phonology, morphology, and syntax from the standpoint of transfer interference. May not be taken for credit in addition to the discontinued GER 337.

Prerequisite: GER 221, 222 or fluency in German

Fall, 3 credits

GER 203 Introduction to Germanic Studies

Using selected texts easily read and understood by students whose background in German may be limited, this course is intended to introduce those students to terminology and techniques of literary analysis and interpretation.

Prerequisite: GER 192 or 195

Fall, 3 credits

GER 204 Survey of German Literature

A chronological survey of German literature from its beginnings to the present with stress on defining the periods therein. All readings will be in German.

Prerequisite: GER 203

Spring, 3 credits

GER 221, 222 German Conversation and Composition

This course consists of the active use of spoken and written German.

Prerequisite: GER 192 or 195

Fall (221) and spring (222), 3 credits each semester

GER 231 German for Business and Career

An introduction to the German business environment. Designed to broaden previous knowledge of German by emphasizing business terms and conversational skills.

Prerequisite: GER 192 or 195

Fall or spring, 3 credits

GER 301 German Drama

A survey of German drama and its subgenres. All work will be done in German.

Prerequisite: GER 204

Fall, 3 credits

GER 302 German Prose

A survey of German prose and its subgenres. All work will be done in German.

Prerequisite: GER 204

Spring, 3 credits

GER 303 German Poetry

A survey of German poetry and its subgenres. All work will be done in German.
Prerequisite: GER 204
Fall, 3 credits

GER 304 Goethezeit

An intensive study of German literature in the period 1750-1832. All work will be done in German.
Prerequisite: GER 204
Spring, 3 credits

GER 321, 322 Advanced German Conversation and Composition

A course designed to develop fluency in spoken and written German. Students will learn to express themselves idiomatically and fluently and become acquainted with the subtleties of German grammar and style.
Prerequisites: GER 221, 222
Fall (321) and spring (322), 3 credits each semester

GER 338 History of the German Language (formerly GER 202)

The development of the German language from Indo-European to modern High German. While special emphasis will be placed on western Germanic languages, specifically German, some attention will be given to the Scandinavian languages and Gothic. Work will be done within the framework of modern linguistic theory (generative-transformational phonology). A historically representative selection of texts will be examined. Conducted as a seminar.
Prerequisite: GER 192 or 195
Spring, 3 credits

GER 420 Special Topics in German Literature

An intensive study of the works of a German author or a period of German literature. All work will be done in German. May be repeated as the subject matter differs.
Prerequisites: GER 321, 322
Schedule to be announced, 3 credits

GER 447 Special Author

A tutorial demanding intensive study of the works of a specific German-language author. All work will be done in German. May be repeated.
Prerequisites: GER 301-304
Fall and spring, 3 credits

GER 448 Special Period

A tutorial demanding intensive study of German-language literature of a specific period. All work will be done in German. May be repeated.
Prerequisites: GER 301-304
Fall and spring, 3 credits

GER 487 Independent Readings and Research in German

Qualified juniors and seniors may read independently in an approved program of advanced or specialized language, area, or culture studies under the supervision of a faculty member.
Prerequisites: GER 221 or 222 or 231; permission of department
Fall and spring, 1 to 3 credits

GER 488 Internship

Participation in local, state, national, and international public and private agencies and organizations to apply and reinforce language and related skills and knowledge of social and cultural institutions.
Prerequisites: GER 221, 222, 231; permission of instructor, department, and Office of Undergraduate Studies; specific placement examinations where applicable
Fall and spring, 3 to 12 credits

Scandinavian**SWE 111, 112 Elementary Swedish I, II**

An introduction to spoken and written Swedish, stressing pronunciation, speaking, comprehension, reading, and writing. Selected texts will be read. Practice in the language laboratory supplements class work. No student who has had two or more years of Swedish in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for SWE 111 without written permission from the supervisor of the course.
Fall (111) and spring (112), 3 credits each semester

SWE 141 Scandinavian Masterworks (In English)

A survey in English of major works of Scandinavian literature from Viking times through the 20th century. This course is designed to develop competence in textual analysis. May not be used to satisfy the foreign language proficiency requirement.
Fall, 3 credits

SWE 191, 192 Intermediate Swedish I, II

The reading and interpretation of Swedish texts, with a review of Swedish grammar, composition, and conversation.
Prerequisite: SWE 112
Fall (191) and spring (192), 3 credits each semester

SWE 320 Special Topics in Swedish Literature

An intensive study of selected works of Swedish authors or a period of Swedish literature. All work will be done in Swedish. May be repeated as the subject matter differs.
Prerequisite: SWE 192
Schedule to be announced, 3 credits

SWE 447 Directed Readings in Scandinavian

Individually supervised readings of selected Scandinavian authors such as Ibsen, Strindberg, Lagerkvist, Moberg, and Holberg. May be repeated.
Prerequisites: Reading fluency in the language of the author studied; permission of department
Fall and spring, 3 credits

Yiddish**YDH 111, 112 Elementary Yiddish**

An introduction to spoken and written Yiddish, stressing pronunciation, speaking, comprehension, reading, writing, and culture. No student who has had two or more years of Yiddish in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for YDH 111 without written permission from the supervisor of the course.
Fall (111) and spring (112), 3 credits each semester

YDH 191, 192 Intermediate Yiddish

The reading and interpretation of Yiddish texts, with a review of Yiddish grammar, composition, and conversation.
Prerequisite: YDH 112
Fall (191) and spring (192), 3 credits each semester

YDH 447 Special Author

A tutorial demanding intensive study of the works of a specific Yiddish-language author. All work will be done in Yiddish. May be repeated.
Prerequisites: YDH 192; permission of instructor and department
Fall and spring, 3 credits

YDH 448 Special Period

A tutorial demanding intensive study of Yiddish-language literature of a specific period. All work will be done in Yiddish. May be repeated.
Prerequisites: YDH 192; permission of instructor and department
Fall and spring, 3 credits

Slavic Languages and Literatures**Russian****RUS 109 Russian Culture (In English)**

An introduction to the masterpieces of culture that affect Russian society. Extensive use of video, film, slides, and recordings. May not be used to satisfy the foreign language proficiency requirement.
Fall, 1 credit

RUS 110 Soviet Culture Today (In English)

An introduction to contemporary life in the Soviet Union viewed through literature, theatre, music, and other art forms. May not be used to satisfy the foreign language proficiency requirement.

Spring, 1 credit

RUS 111, 112 Elementary Russian I, II

An introduction to Russian. Class work will be supplemented by practice in the language laboratory. No student who has had two or more years of Russian in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for RUS 111 without written permission from the supervisor of the course.

Fall (111) and spring (112), 4 credits each semester

RUS 141, 142 Masterpieces of Russian Literature in Translation

A survey in English of major Russian writers of the 19th and 20th centuries. This course is designed to introduce the student to a brief history of Russian literature as well as to develop competence in textual analysis. May not be used to satisfy the foreign language proficiency requirement.

Fall (141) and spring (142), 3 credits each semester

RUS 191, 192 Intermediate Russian I, II

An intermediate course in Russian stressing an active command of the language.

Prerequisite: RUS 112

Fall (191) and spring (192), 3 credits each semester

RUS 221, 222 Russian Conversation and Composition

A review of grammar and practice in idiomatic Russian.

Prerequisite: RUS 192

Fall (221) and spring (222), 3 credits each semester

RUS 291 Special Author in Translation

Analysis of major works and significant criticism. Each semester is devoted to one particular author such as Tolstoy, Dostoevsky, Chekhov, or Bulgakov. May be repeated, but will count toward fulfillment of major requirements only once. May not be used to satisfy the foreign language proficiency requirement.

Schedule to be announced, 3 credits

RUS 292 Special Genre or Period in Translation

Examination of a genre or period. Each semester is devoted to one particular genre such as the Russian novel, or period, such as the 20th century. May be repeated, but will count toward fulfillment of major requirements only once. May not be used to satisfy the foreign language proficiency requirement.

Schedule to be announced, 3 credits

RUS 302 History of the Russian Language

The development of the Russian literary language from its beginnings to the present day. The influence of Church Slavonic on the development of the language is discussed.

Prerequisite: RUS 192

Fall or spring, 3 credits

RUS 321, 322 Advanced Russian Conversation and Composition

A course designed to develop mastery of spoken and written Russian. Students will learn to express themselves idiomatically and to translate advanced texts.

Prerequisite: RUS 222

Fall (321) and spring (322), 3 credits each semester

RUS 323 Russian Literary Texts

Literary analysis and its application to representative texts chosen from various periods of Russian literature. Readings and discussions are in Russian.

Prerequisite: RUS 321

Fall or spring, 3 credits

RUS 339 Structure of Russian

The study of Russian phonetics, phonology, and morphology, with a discussion of different theoretical approaches as well as practical application. This course is especially recommended for teachers of Russian.

Prerequisite: RUS 192

Spring, 3 credits

RUS 391 Special Author

A detailed study of the works of a major author of the 19th or 20th century, such as Pushkin, Gogol, Turgenev, and Blok. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the subject matter changes.

Prerequisites: RUS 141, 142 and 222

Schedule to be announced, 3 credits

RUS 392 Special Genre or Period

A detailed study of a special genre—such as the Russian novel or Russian drama—or period—such as Soviet literature. Readings are in Russian, and classes are conducted largely in Russian. May be repeated as the subject matter changes.

Prerequisites: RUS 141, 142 and 222

Schedule to be announced, 3 credits

RUS 487 Independent Readings and Research in Russian

A program of independent advanced study for qualified juniors and seniors under the supervision of a faculty member.

Prerequisites: RUS 221, 222; a 200- or 300-level course in Russian literature; permission of instructor and department
Fall and spring, 1 to 3 credits

RUS 490 Senior Seminar

Advanced research and discussion in various aspects of Russian studies. May be repeated as the subject matter changes.

Prerequisites: RUS 141, 142 and 222
Fall and spring, 3 credits

Polish**PSH 111, 112 Elementary Polish I, II**

An introduction to spoken and written Polish, stressing pronunciation, speaking, comprehension, reading, writing, and culture. No student who has had two or more years of Polish in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for PSH 111 without written permission from the supervisor of the course.

Fall (111) and spring (112), 3 credits each semester

PSH 191, 192 Intermediate Polish I, II

The reading and interpretation of Polish texts, with a review of Polish grammar, composition, and conversation. The student gains an acquaintance with the various literary genres through examples drawn from representative Polish authors.

Prerequisite: PSH 112

Fall (191) and spring (192), 3 credits each semester

Minor East European Languages**EEL 111, 112 Elementary Minor East European Language I, II**

An introduction to spoken and written minor East European language (Serbo-Croatian, Czech, Ukrainian, Slovak, Bulgarian), stressing pronunciation, speaking, comprehension, reading, writing, and culture. No student who has had two or more years of the selected language in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for EEL 111 without written permission from the supervisor of the course. May be repeated for more than one language.

Schedule to be announced, 3 credits each semester

EEL 120 Introduction to Slavic Literatures in Translation

An introduction to major writers of Poland and other Eastern European countries. Conducted in English. The course focuses on contemporary literary topics and genres. May not be used to satisfy the foreign language proficiency requirement.
Spring, 3 credits

EEL 293 Topics in Contemporary Slavic Culture (in English) (formerly RUS 293)

Analysis and discussion of contemporary literary and social topics dealing with Russia or Eastern Europe. May be repeated, but will count toward fulfillment of major requirements only once. May not be used to satisfy the foreign language proficiency requirement.
Fall or spring, 3 credits

EEL 394 Topics in Slavic Studies (formerly RUS 394)

The investigation of selected topics in Slavic languages or literatures. Readings are done in the original language. May be repeated as subject matter varies.
Prerequisites: Reading knowledge of appropriate language; permission of instructor
Spring, 3 credits

Department of Hispanic Languages and Literature

Professors

Pedro Lastra, University Professor, University of Chile: Spanish-American literature.

Elias L. Rivers, Ph.D., Yale University: Spanish literature; literary theory.

Associate Professors

Roman de la Campa, Ph.D., University of Minnesota: Latin-American and Caribbean literature; contemporary critical theory.

Jaime A. Giordano, University Professor, University of Concepcion: Spanish-American literature.

James B. McKenna, Ph.D., Harvard University: 20th-century Hispanic culture and literature.

Adrian G. Montoro, Ph.D., Universities of Havana and Madrid: Medieval literature; modern critical theory.

Maria Luisa Nunes, Director of Undergraduate Studies, Ph.D., City University of New York: 19th- and 20th-century Luso-Brazilian literature.

Georgina Sabat-Rivers, Chairperson, Ph.D., The Johns Hopkins University: Spanish Golden Age and Colonial literature.

Assistant Professors

Flora Klein-Andreu, Ph.D., Columbia University: Semantics; sociolinguistics and language change.

Hilda Pato, Ph.D., University of Pennsylvania: Contemporary Spanish literature, 20th-century Spanish poetry.

Teaching Assistants

Estimated number: 22

The department offers a major program leading to the Bachelor of Arts degree in Spanish, a minor in Spanish, and courses in Portuguese. Students wishing to major in Spanish should consult with a departmental advisor to choose individual programs.

Requirements for the Major in Spanish

	<i>Credits</i>
A. Required Basic Courses	
1. a. Either SPN 221 Spanish Conversation and Composition or SPN 220 Spanish Conversation and Composition for Students of Spanish-Speaking Background	3
b. SPN 222 Introduction to Literary Studies (Note: Challenge Examinations are given in SPN 221 and 222, but not in SPN 220)	3
2. Two courses chosen from SPN 301, 391, 392	6
3. Three courses chosen from SPN 396, 397, 398, 462	9
B. Advanced Courses in Hispanic Linguistics, Literature, and Culture	
1. Either SPN 421 or 442. (Taking both is strongly recommended)	3
2. Twelve additional credits of work in upper-division courses chosen in consultation with the departmental advisor. (A maximum of three credits of SPN 447 is applicable toward this requirement)	12
Total	36

All courses offered to fulfill major requirements must be taken for a letter grade (except that P is acceptable for SPN 221 and 222 completed through Challenge examinations).

All upper-division courses in Spanish must be passed with a grade of C or higher.

The department requires transfer students to take at least 18 credits of Spanish courses in residence at Stony Brook to complete a Spanish major.

Teacher Training Program

Students who wish to prepare for certification as secondary school teachers of Spanish should take at least two of the following courses: SPN 301, SPN 462, SPN 463. They should consult appropriate departmental advisors concerning additional requirements and procedures of the teacher preparation program. To be eligible to enter student teaching, students must have maintained a 3.0 grade point average in the major and a 2.5 grade point average overall. See also alphabetical listing: *Foreign Languages Secondary Teacher Preparation Program*.

The Honors Program in Spanish

To be awarded honors, a departmental major must: (1) maintain an overall grade point average of at least 3.0 and a grade point average of at least 3.5 in Spanish courses taken for the major; and (2) write a senior thesis judged worthy of honors. Students eligible to write a senior thesis must find a member of the department faculty to act as a thesis advisor and enroll in SPN 495. The thesis topic must be approved by the Director of Undergraduate Studies, the chairperson, and the thesis advisor. The thesis will be evaluated by the thesis advisor,

another member of the Spanish faculty, and a third reader from outside the department. Prerequisites to register in SPN 495 are: (1) same as requirement 1, above; (2) senior standing; and (3) permission of department.

Minor in Spanish Language, Culture, and Literature

	<i>Credits</i>
A. Basic Language	
1. SPN 221 Spanish Conversation and Composition or SPN 220 Spanish Conversation and Composition for Students of Spanish-Speaking Background	3
2. SPN 222 Introduction to Literary Studies	3
B. Advanced Courses	
1. Four courses at the 300 level	12
2. Two courses at the 400 level. Of these <i>one</i> is to be chosen from: SPN 421 Topics in Golden Age Literature and Culture or SPN 442 Topics in Spanish-American Literature and Culture from 1880 to the Present	6
Total	24

All upper-division courses in Spanish offered to fulfill minor requirements must be passed with a grade of C or higher. At least nine credits of upper-division Spanish courses must be earned at Stony Brook to complete the minor.

Study Abroad

Language majors and other interested students who would like to spend a semester or a year studying abroad should consult the Director of Undergraduate Studies.

Placement

Entering students who wish to continue the study of Spanish started in high school should consult a departmental advisor to help them in the choice of the appropriate course.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Portuguese Language

POR 111, 112 Elementary Portuguese I, II

An introduction to spoken and written Portuguese, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory will supplement class work. No student who has had two or more years of Portuguese in high school (or who has otherwise acquired an equivalent proficiency) will be permitted to register for POR 111 without written permission from the supervisor of the course.
Fall (111) and spring (112), 3 credits each semester

Spanish Language

SPN 111, 112 Elementary Spanish I, II

An introduction to spoken and written Spanish, stressing pronunciation, speaking, comprehension, reading, and writing. Language laboratory will supplement class work. No student who has had two or more years of Spanish in high school (or who has otherwise acquired an equivalent proficiency) will be permitted to register for SPN 111 without written permission from the supervisor of the course.
Fall and spring, 4 credits each semester

SPN 191, 192 Intermediate Spanish I, II

A comprehensive review of the Spanish language. It is intended to develop competence in reading, writing, and speaking Spanish through the study of grammar and the interpretation of selected literary texts.
Prerequisite: SPN 112
Fall and spring, 3 credits each semester

SPN 220 Spanish Conversation and Composition for Students of Spanish-Speaking Background

A course intended for students of Spanish-speaking background, designed to improve their competence in oral and written Spanish. May not be taken for credit in addition to SPN 221.
Fall or spring, 3 credits

SPN 221 Spanish Conversation and Composition

A thorough review of Spanish grammar and of the active use of spoken and written forms. SPN 221 may not be taken for credit in addition to SPN 220.
Prerequisite: SPN 192
Fall and spring, 3 credits

SPN 222 Introduction to Literary Studies

Reading of selected passages of prose and poetry in class, with special concentration on

improving the students' written and oral skills, and introducing them to the basic elements of literary analysis of Spanish works.

Prerequisite: SPN 220 or 221
Fall and spring, 3 credits

Hispanic Linguistics, Literature, and Culture (Conducted in Spanish)

SPN 301 Advanced Spanish Grammar and Composition

A review of advanced Spanish grammar with emphasis on improving writing skills and increasing mastery of Spanish syntax. Extensive practice in composition and in translation.

Prerequisite: SPN 222; permission of instructor
Fall or spring, 3 credits

SPN 302 Topics in Spanish Linguistics

The specific content of this course will be announced each semester. Possible topics may be: Spanish Phonetics, History of the Spanish Language, and Applied Linguistics for Secondary School Teachers.

Prerequisite: SPN 222
Schedule to be announced, 3 credits

SPN 303 Topics in Practical Spanish

A course for students who wish to become more proficient in reading, writing, and translating Spanish, to be used in business, administration, and in other fields of everyday professional life. Emphasis will be placed on the idiomatic peculiarities of the Spanish language and the relation of Spanish to the structure of English.

Prerequisite: SPN 222
Fall or spring, 3 credits

SPN 323 Advanced Spanish Conversation

A course designed to develop and maintain complete fluency in the language. Not open to native-background speakers or students who have been in a Spanish-speaking country for a considerable length of time.

Prerequisite: SPN 222
Fall or spring, 3 credits

SPN 391 The Culture and Civilization of Spain

The evolution of the culture and civilization of Spain as seen through its history, art, and literature.

Prerequisite: SPN 222
Fall, 3 credits

SPN 392 The Culture and Civilization of Spanish America

The evolution of the culture and civilization of Spanish America as seen through its history, art, and literature.

Prerequisite: SPN 222
Spring, 3 credits

SPN 396 Introduction to Spanish-American Literature

Readings in Spanish-American literature from the Colonial period to the present.

Prerequisite: SPN 222

Fall, 3 credits

SPN 397 Introduction to Spanish Literature I

Readings in Peninsular literature from its origins through the 17th century.

Prerequisite: SPN 222

Fall, 3 credits

SPN 398 Introduction to Spanish Literature II

Readings in Peninsular literature from the 18th century to the present.

Prerequisite: SPN 222

Spring, 3 credits

Advanced Courses (conducted in Spanish)

The topics to be studied in SPN 411, 421, 431, 432, 441, 442, 444, and 455 will appear in the Class Schedule, and a description of the specific contents will be available one semester in advance from the department. Each course may be repeated for credit as the subject matter changes.

SPN 411 Topics in Medieval and Renaissance Literature and Culture

Readings and discussion of major literary works in Spanish within the medieval and Renaissance periods and their interrelation with the cultural context. Topics will vary. May be repeated.

Prerequisite: SPN 397

Schedule to be announced, 3 credits

SPN 421 Topics in Golden Age Literature and Culture

Readings and discussion of major literary works within the Golden Age period (16th and 17th centuries) and their interrelation with the cultural context. Topics will vary. May be repeated.

Prerequisite: SPN 397

Schedule to be announced, 3 credits

SPN 431 Topics in 18th- and 19th-Century Peninsular Literature and Culture

Readings and discussion of major literary works of the 18th and 19th centuries in Spain and their interrelation with the cultural context. Topics will vary. May be repeated.

Prerequisite: SPN 398

Schedule to be announced, 3 credits

SPN 432 Topics in Spanish-American Literature and Culture from the Colonial Period to 1880

Readings and discussion of major literary works in Spanish America within the Colonial, the Independence, and the Romantic periods and their interrelation with the cultural context. Topics will vary. May be repeated.

Prerequisite: SPN 396

Schedule to be announced, 3 credits

SPN 441 Topics in Peninsular Literature and Culture from 1898 to the Present

Readings and discussion of major literary works in Spain from the Generation of 1898 to the present and their interrelation with the cultural context. Topics will vary. May be repeated.

Prerequisite: SPN 398

Schedule to be announced, 3 credits

SPN 442 Topics in Spanish-American Literature and Culture from 1880 to the Present

Readings and discussion of major literary works in Spanish America from the outset of modernism and naturalism to the contemporary period and their interrelation with the cultural context. Topics will vary. May be repeated.

Prerequisite: SPN 396

Schedule to be announced, 3 credits

SPN 444 Topics in Caribbean Literature and Culture

Readings and discussion of relevant literary works in Puerto Rico, Cuba, and other Caribbean countries. Special emphasis will be placed on the interrelation of literature and culture. Topics will vary. May be repeated.

Prerequisite: SPN 392 or 396

Schedule to be announced, 3 credits

SPN 447 Directed Individual Studies

Individually supervised studies in selected topics of Hispanic language, literature, and culture. May be repeated. Normally no more than three credits are allowed toward the major requirements; other credits are considered as electives.

Prerequisite: Permission of instructor and department

Fall and spring, 1 to 6 credits

SPN 455 Topics in Literary Genres

Reading of major works in Spanish belonging to specific literary genres such as drama (*comedia* and *entremes*), epic poetry (vernacular and classical), lyric poetry (sonnet, ode, elegy), and fiction (romance, novel, short story); theoretical discussion and analysis of formal and thematic characteristics and of historical development.

Prerequisite: SPN 397 or 398

Schedule to be announced, 3 credits

SPN 461 Hispanic Language and Culture in the United States

Studies in the forms of survival of Hispanic culture in the United States and the identity crisis experienced by the Hispanic communities in this country. This course will include a survey of written material (from journalism to poetry) reflecting this conflict, and a critical analysis of the current theories of bilingualism and biculturalism as applied to those communities.

Prerequisite: SPN 222

Alternate years, 3 credits (not offered in 1985-86)

SPN 462 Contrastive Spanish-English Phonology

A study of Spanish and English phonology and phonetics from a contrastive linguistics perspective. Its relation to the analysis of bilingualism.

Prerequisites: SPN 222; permission of instructor

Alternate years, 3 credits (not offered in 1986-87)

SPN 463 Contrastive Spanish-English Morphology

A study of Spanish and English morphology and syntax from a contrastive linguistics perspective. Its relation to the analysis of bilingualism.

Prerequisites: SPN 301; permission of instructor

Alternate years, 3 credits (not offered in 1985-86)

SPN 475 Undergraduate Teaching Practicum in Spanish

Each student will attend a weekly practicum section taught by the coordinator of undergraduate teaching assistants. In addition, each student will be assigned to assist an instructor of a language class. Responsibilities may include preparing material for practice sessions, initial correction of homework and tests, and helping students with problems.

Satisfactory/Unsatisfactory grading only.

Prerequisites: Upper-division Spanish major; preferably senior standing; permission of instructor and department chairperson.

Fall and spring, 3 credits

SPN 495 Spanish Senior Honors

See description and prerequisites of the Honors Program in Spanish, page 121.

Spring, 3 credits

Department of History

Professors

Werner T. Angress, Ph.D., University of California, Berkeley: Modern Europe; Germany. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974-75

David B. Burner, Ph.D., Columbia University: 20th-century U.S. political and social.

Ernesto Chinchilla-Aguilar, Ph.D., Escuela Nacional de Antropología de México: Colonial Latin America.

Richard F. Kuisel, Ph.D., University of California, Berkeley: Modern Europe; France.

Eric E. Lampard, Ph.D., University of Wisconsin: Economic and urban.

Jackson T. Main, Emeritus, Ph.D., University of Wisconsin: U.S. Colonial.

Joel T. Rosenthal, Ph.D., University of Chicago: Medieval Europe; England.

Eli Seifman, Ph.D., New York University: History of education; contemporary China.

Bernard Semmel, Ph.D., Columbia University: Modern British social and intellectual.

William R. Taylor, Ph.D., Harvard University: 19th- and 20th-century U.S. cultural and intellectual.

Fred Weinstein, Director of Graduate Studies, Ph.D., University of California, Berkeley: Psychohistory; Russia.

Associate Professors

Per A. Alin, Ph.D., University of Vienna: Ancient; pre-Classical archaeology.

Karl S. Bottigheimer, Ph.D., University of California, Berkeley: England and Ireland.

Hugh G. Cleland, Ph.D., Case-Western Reserve University: U.S. labor. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1979-80

Ruth Schwartz Cowan, Ph.D., The Johns Hopkins University: History of biology and technology; women in modern society.

Elizabeth Garber, Ph.D., Case-Western Reserve University: History of physics and thermodynamics; European intellectual and social.

Herman E. Lebovics, Chairperson, Ph.D., Yale University: Modern European intellectual and social.

Robert H.G. Lee, Ph.D., Columbia University: China and the Far East.

Helen Rodnite Lemay, Ph.D., Columbia University: Medieval and Renaissance intellectual; paleography. Recipient of the President's Award for Excellence in Teaching, 1983-84

Clara E. Lida, Ph.D., Princeton University: Spain and Latin America; labor.

Wilbur R. Miller, Ph.D., Columbia University: 19th-century U.S.

Leslie Owens, Ph.D., University of California, Riverside: Afro-American history.

John W. Pratt, Ph.D., Harvard University: U.S. constitutional and legal; New York State.

Nancy Tomes, Director of Undergraduate Studies, Ph.D., University of Pennsylvania: U.S. social, medical, and women's history.

Barbara Weinstein, Ph.D., Yale University: Brazil; colonial and modern Latin America; slave societies.

Ruben E. Weltsch, Ph.D., University of Colorado: Eastern Europe; Hapsburg Empire.

John A. Williams, Ph.D., University of Wisconsin: British Empire; Africa; the Commonwealth; expansion of Europe.

Assistant Professors

Michael Barnhart, Ph.D., Harvard University: U.S. foreign policy; 20th-century U.S. and modern Japan.

Ned Landsman, Ph.D., University of Pennsylvania: U.S. Colonial.

Brooke Larson, Ph.D., Columbia University: Andean history; colonial and modern Latin America.

Gary Marker, Ph.D., University of California, Berkeley: 18th- and 19th-century Russian social history.

W. Burghardt Turner, Emeritus, M.A., Columbia University: Afro-American and Native American history.

Lecturer

Karl W. Demuth, Adjunct, M.A., Harvard University: Modern Europe; France.

Teaching Assistants

Estimated number: 8

Latin America, though courses are offered regularly in other areas such as the Far East and the history of science. Courses numbered in the 100s include general surveys, especially suitable for freshmen, and others designed to introduce students to the methods and problems of history. Two-hundred-level courses are basic surveys of areas and periods. The 300-level series deals with historical subjects and problems on a more advanced level, usually involving more intellectual content and written work (although the student must expect written work in every course). Four-hundred-level colloquia are intended to offer the student an opportunity to do more intensive reading, research, and writing, usually in small classes, and with closer contact with the instructor.

Although the department does not set prerequisites for many of its courses, it does recommend that students interested in a certain area move from lower- to higher-number courses as they gain experience. History majors, history minors, and other students taking history courses as electives are advised to try a number of fields of history, at various levels of course offerings.

Each semester the department issues a booklet with a detailed description of its offerings. Students interested in history, whether as a major, a minor, a related social science course, or for general liberal arts purposes, are invited to read this booklet and to seek advice from the department's Director of Undergraduate Studies and other faculty members.

Requirements for the Major in History

Credits

- A. Study within the Area of the Major
A minimum of ten courses (30 credits) distributed as follows:
- Two courses at the 100 level 6
 - A primary field of five courses to be selected from one of the following: United States,

The offerings in history concentrate on the fields of United States, Europe, and

European, Latin American, Ancient and Medieval, or non-Western history. Primary fields developed along topical or thematic lines may be selected with approval of the department's Undergraduate Committee. The primary field, to be selected and filed with the Department no later than the end of the first full semester after declaring the major, shall be distributed as follows:

Two courses at the 200 level	
Two courses at the 300 level	
One course at the 400 level, excluding HIS 447	15
3. Three courses selected from outside the primary field and above the 100 level, with at least one of these courses at the 300 or 400 level.	9
	Total 30

B. Study in a Related Area
Two upper-division courses in a related discipline, the discipline to be selected with department approval no later than the time limit specified for choosing the primary field.

6
Total 36

- Notes**
1. All courses taken to meet requirements A and B must be taken for a letter grade.
 2. No grade lower than a C in an upper-division course may be applied toward the major requirements.
 3. At least 12 credits in Group A must be taken within the Department of History at Stony Brook.
 4. No transferred course with a grade lower than C may be applied toward the major requirements in Group A.

The Honors Program in History

Departmental majors with a 3.0 average in history courses and related disciplines as specified in the major requirements are eligible to enroll in the History Honors Program at the beginning of their senior year.

The student, after asking a faculty member to be a sponsor, must submit a proposal to the department indicating the merit of the planned research. The supervising faculty member must also submit a statement supporting the student's proposal. This must be done in the semester prior to the beginning of the project.

The honors paper resulting from a student's research will be read by two historians and a member of another department, as arranged by the Director of Undergraduate Studies. If the paper is judged to be of unusual merit and the student's record warrants such a determination, the department will recommend honors.

The Minor in History

The minor, which requires 18 credits, is organized around the student's interest in a particular area of history, defined either by geography (e.g., United States, Latin America) or topic (e.g., imperialism, social change). Courses must be taken for a letter grade. No grades lower than 'C' in upper-division courses may be applied to the history minor. At least nine of the eighteen credits must be taken at Stony Brook, three of them at the upper-division level. The specific distribution of the credits should be determined in consultation with the Director of Undergraduate Studies. An example of an acceptable distribution would be the following:

	Credits
A. One two-semester survey course in the period of the student's interest (100 or 200 level)	6
B. One (additional) course at the 200 level	3
C. Three courses at the 300 or 400 levels, at least one of which must be at the 400 level	9
	Total 18

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

HIS 100 The Ancient World

A broad survey of the development of the Near Eastern and Mediterranean civilizations of Mesopotamia, Egypt, and neighboring areas, as well as Greece and Rome from their earliest beginnings to the decline of the Roman Empire.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 101 Introduction to European History: Pre-Industrial

A study of continuity and change in European ideas and institutions between the Middle Ages and the French Revolution. Feudal society, the rise of cities, the Reformations, and the Old Regime will be discussed.

Fall and spring, 3 credits

HIS 102 Introduction to European History: Modern Europe

A study of European ideas and institutions during the 19th and 20th centuries: the growth of industrialism and of democracy; the Marxist challenge and the Russian Revolution; the great world wars and the waning of European hegemony.

Fall and spring, 3 credits

HIS 103 American History to 1877

A survey of American history from the Age of Discovery to the end of Reconstruction. Topics to be treated will include such subjects as the transplantation of European culture to America, the rise of American nationalism, the democratization of American society, the institution of slavery, and the emergence of an industrial society.

Fall and spring, 3 credits

HIS 104 United States Since 1877

A survey of modern American history from the end of Reconstruction to the present. The course will focus on the impact of industrialization on social, cultural, and political life; the emergence of the United States as a world power; and the adaptation of that power to the crises of the later 20th century.

Fall and spring, 3 credits

HIS 135, 136 Science, Technology, and Medicine in Western Civilization I, II

The development of Western civilization through the intellectual and social development of Western science, technology, and medicine. The first semester will begin with a discussion of the 20th century and will then cover the period from the ancient Greek civilization to the Scientific Revolution of the 17th century. The second semester

will cover the 18th, 19th, and 20th centuries. *Fall (135) and spring (136), alternate years, 3 credits each semester (not offered in 1985-86)*

HIS 201 England from 1066 to 1688

The development of English society will be traced from the Norman Conquest to the "Glorious Revolution" with special attention to the feudal constitution, the evolution of Parliament, the Civil War, and the Commercial Revolution. *Spring, alternate years, 3 credits (not offered in 1985-86)*

HIS 202 England Since 1688

The transformation of English society by the Industrial Revolution, the development of parliamentary politics and democracy, the growth of imperial power, and the readjustment to 20th-century realities. *Spring, 3 credits*

HIS 208 Ireland from St. Patrick to the Present

A survey of the history of Ireland with emphasis on its colonization and the subsequent emergence of an independent, though troubled and fragmentary, national state. *Spring, alternate years, 3 credits (not offered in 1986-87)*

HIS 209 Imperial Russia

The political, social, and cultural developments from Peter the Great to the revolutionary era with emphasis on the unique institutional structure of Tsarist Russia and the problem of its relations with the West. *Fall, 3 credits*

HIS 210 Soviet Russia

The ideological and social background of the Russian Revolution and the evolution of Soviet rule: the problem of industrialization, the relations with the capitalist West, and totalitarian control over society. *Spring, 3 credits*

HIS 213 Colonial Latin America

From conquest to independence: Spanish and Portuguese colonialism in the New World and the forging of Latin American societies. *Fall, 3 credits*

HIS 214 Modern Latin America

From independence to the present: the evolution of 19th- and 20th-century Latin America. Emphasis on current social, economic, and political issues. *Spring, 3 credits*

HIS 216 History of U.S.-Latin American Relations

An examination of the impact of U.S. economic and political relations with Latin America from the mid-19th century to the present. The course will consider changes in American policy toward Latin America, as well as the varying responses of Latin American nations to U.S. intervention and influence. *Spring, alternate years, 3 credits (not offered in 1985-86)*

HIS 219 Far Eastern Civilization: Origins and Development

A survey of the history of the Far Eastern countries of China, Japan, and Korea from prehistory to the mid-19th century. Emphasis will be on social and political changes in these countries and the enduring elements of their cultures. *Fall, 3 credits*

HIS 220 Far Eastern Civilization: The Modern Transformation

A survey of the modern history of the Far Eastern countries of China, Japan, and Korea from the mid-19th century to the present day. Emphasis will be on the impact of the West, reform movements, wars, and revolutions that transformed their traditional societies into modern states. *Prerequisite: HIS 219 recommended* *Spring, 3 credits*

HIS 225 Civilization of Israel I

The course of Jewish history and the development of Judaism during the Persian, Hellenistic, and Roman periods (ca. 500 B.C.E.-ca. 500 C.E.). The course begins with the close of the Hebrew Bible, examines the varieties of Judaism which then arose, and ends with the consolidation of Rabbinic Judaism on one hand and Christianity on the other. Crosslisted with JDS 225. *Fall, 3 credits*

HIS 226 Civilization of Israel II

The history of the Jews and of Judaism since the fall of the Roman Empire and the rise of Islam. The course concludes with a study of the Holocaust and the creation of the State of Israel, and includes a survey of the major forms of American Jewish life. Crosslisted with JDS 226. *Spring, 3 credits*

HIS 227 Modern Mexico

The emergence of the Mexican nation in the 19th century and its Revolution. The course provides an overview of Mexican history since Independence, stressing the Reform, the 1910-20 conflict, the role of the Church, land reform, and the modern one-party state. *Alternate years, 3 credits (not offered in 1985-86)*

HIS 230 The Ancient Near East

The development of early civilizations in Mesopotamia, Egypt, and neighboring areas from the Stone Age to the rise of the Persian Empire. *Spring, alternate years, 3 credits (not offered in 1985-86)*

HIS 231 History of Greece

A survey of Greek history from the Stone Age beginnings with special emphasis on the achievements of the Greeks in the Archaic and Classical periods. *Spring, alternate years, 3 credits (not offered in 1986-87)*

HIS 232 History of Rome

The development of the Roman Republic and Empire with an emphasis on the institutions that bound the Roman Mediterranean together and on the Greco-Roman civilization of the Empire. *Fall, 3 credits*

HIS 233 Medieval History, 300-1100

European history from the decline of Rome to the 11th century, including the rise of Christianity, Byzantium, Islam, the Gregorian reform, and feudalism. *Fall, 3 credits*

HIS 234 The High Middle Ages, 1100-1400

The High Middle Ages, including the crusades, courtly love, the 12th-century Renaissance, scholasticism, Franciscanism, and the Inquisition. *Spring, 3 credits*

HIS 235 Humanism and Renaissance

The study of the Italian Renaissance with particular emphasis on the intellectual history of the period. Non-Italian thinkers who played a role in the intellectual movements of the time will also be considered. *Fall, 3 credits*

HIS 236 The Age of the Reformation

A study of pre-Reformation currents such as mysticism and humanism, followed by an examination of the 16th-century reformations. The course also includes economic and political changes in the 16th century. *Spring, 3 credits*

HIS 241 The Holocaust: The Destruction of European Jewry—Causes and Consequences

The rise of modern anti-Semitism and its political application in Nazi Germany. Topics covered include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. Crosslisted with JDS 241. *Prerequisite: JDS/HIS 226. Alternate years, 3 credits (not offered in 1985-86)*

HIS 248 Europe, 1815-1914 (formerly HIS 238)

European history from the Congress of Vienna to the outbreak of the First World War, with emphasis on political and social developments, but also including economic and cultural trends.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 249 Europe, 1914-1945 (formerly HIS 239)

European history from the outbreak of the First World War to the post-World War II period, with emphasis on political and social developments, but also including economic and cultural trends.

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 250 The Second World War, 1939-1945

A comprehensive examination of the ordeal of total war. Military history forms the background for a study of how societies mobilized to meet the demands of total war; how people faced foreign occupation and persecution; and how the war changed political, economic, and social institutions, inspired moral reflection and cultural expression, and altered the global balance of power.

Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 251 Europe Since 1945 (formerly HIS 240)

A study of contemporary Europe emphasizing political developments beginning with the Cold War, decolonization, the problems of postindustrial society, managed capitalism, and intellectual and cultural movements like existentialism and Marxist humanism.

Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 252 The British Commonwealth

Examines British control over dependencies in Africa, Asia, and the Pacific since the 18th century, through comparative study of imperial advance, colonial policy, plural societies, resistance, and transfer of power.

Alternate years, 3 credits (not offered in 1986-87)

HIS 262 American Colonial Society

Political, economic, social, and cultural characteristics of the American colonies from their founding until their separation from Great Britain.

Alternate years, 3 credits (not offered in 1986-87)

HIS 263 Age of the American Revolution

The social, economic, and political history of the period 1763-1787. The course stresses social and economic changes, the causes and results of the revolution, the formation of new state and national governments, and the first party system.

Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 264 The Birth of Modern America

The beginnings of modern political, economic, and social institutions in the United States, and the conflicts that developed between the North and South because of national consolidation and expansion. Areas covered include economic growth and diversity; political democratization and rise of the professional politician; changes in the roles of men and women; and the development of American popular culture. The format is topical, contrasting society in 1800 to its development by 1850.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 265 Civil War and Reconstruction

The course deals with the crisis of sectionalism, the rise of Southern nationalism and of the Republican Party, secession, the Civil War, abolition, and the Reconstruction period.

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 266 The Early National Era

Political, economic, and cultural developments from the beginning of the national government to the age of Jackson and Tocqueville.

Alternate years, 3 credits (not offered in 1986-87)

HIS 268 Recent U.S. History, 1919 to the Present

A survey of recent U.S. history: the 1920s, the Great Depression and New Deal, the Cold War, the 1960s and after. Major American feature films on these periods will be shown and analyzed.

Fall, 3 credits

HIS 269 U.S. Military History

A survey of the role of war and of military thought and institutions in U.S. history from the War of Independence to the present. Attention will be given to the relation of military to civilian political, economic, and social developments.

Fall, 3 credits

HIS 271 History of New York State

A general introduction to the history of New York State. The course surveys major political, economic, and social developments within their geographical setting.

Alternate years, 3 credits (not offered in 1986-87)

HIS 277 History of American Labor to 1900

A history of working people from colonial times through the industrial revolution to 1900. The evolution of business and industry and the influence of social reformers is considered. Lectures are illustrated with paintings, photographs, blueprints, and other visual data from the period. Emphasis is on reasoning from evidence rather than on the presentation of facts.

Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 278 History of American Labor Since 1900

A history of working people during the 20th century. The course includes the evolution of unionism, the rise of mass production and scientific management, the influence of law and government on labor and business.

Lectures are illustrated with photographs, newsreels, paintings, and other visual data from the period. Emphasis is on reasoning from evidence rather than on the presentation of facts.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 291, 292 History of Science, Technology, and Medicine

A survey of the history of Western science, technology, and medicine from Plato (the ancient Greek philosopher) to PLATO (the modern computer language), taught through a close reading of some of the classic texts and biographies of their authors. No specialized knowledge of the sciences is required.

Fall (291) and spring (292), alternate years, 3 credits (not offered in 1986-87)

HIS 295 History of Africa South of the Sahara

Africa, 800-1800; the quickening pace of internal change and external contact, 1800-1880; European conquest and administration, 1800-1945; the end of empire and the recovery of independence.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 300 The Prehistoric Aegean

A study of the prehistoric cultures of Greece, Crete, and Troy, with a particular emphasis on the Minoan and Mycenaean palace centers of the late Bronze Age, primarily using the rich archaeological material but also contemporary and later written sources.

Fall or spring, 3 credits

HIS 301 Historical Research and Writing

Historical interpretation, analysis, research methods, and writing; criticism of the work of selected historians. Application of these skills to individual student research paper.

Prerequisite: Six credits of history
Alternate years, 3 credits (not offered in 1985-86)

HIS 303 Medieval Culture and Society

An in-depth study of medieval culture and society, focusing on intellectual or social factors during the Early Middle Ages, High Middle Ages, or Renaissance.

Alternate years, 3 credits (not offered in 1985-86)

HIS 304 Early Modern England: Change and Reformation, 1509-1603

The development of English society from the reign of Henry VIII to the death of Elizabeth; the decline of medieval institutions, the course of the Reformation and its impact on political, economic, and cultural life.

Prerequisite: A European history course
Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 305 Early Modern England: Revolution and War, 1603-1714

An inquiry into the source, nature, and outcome of the English Revolution of the mid-17th century. Various interpretations will be examined along with representative contemporary documents.

Prerequisite: A European history course
Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 306 The Old Regime and the French Revolution

An examination of the first and most dramatic modern revolution from its origins in the collapse of the *ancien regime*, through the continuing upheavals of 1789-1799 to the aftermath of the revolution in the Napoleonic empire. Although the European context will necessarily be considered, the emphasis throughout will be on developments in France.

Prerequisite: HIS 101 or one other course in European history before 1789
Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 308 The History of the Physical Sciences

An investigation in depth of a limited number of topics in the history of mathematics, physics, and astronomy; for example, the relationship between experiment and theory in ancient and modern physics, physics as method, revolution versus evolution in the development of modern physics.

Prerequisite: PHY 102 or 104
Alternate years, 3 credits (not offered in 1986-87)

HIS 309 Modern France, 1815-1900

The French nation's search for political democracy, economic and social stability, grandeur, and cultural preeminence in the 19th century.

Prerequisite: HIS 102
Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 310 Modern France, 1900 to the Present

The French nation's response to the traumas of world wars, depression, decolonization, and the challenge of industrial society from the Dreyfus Affair to the Fifth Republic.

Prerequisite: HIS 102
Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 311 The Rise of Imperial Germany, 1806-1890

The course of German history from the Napoleonic to the Bismarckian era. Major theme: the power struggles of traditional authoritarianism vs. liberalism and socialism in an age of drastic economic transformation.

Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 312 From Empire to Third Reich: Germany, 1890-1945

From Bismarck's dismissal through the Wilhelmian Empire, the First World War and Revolution to Germany's unsuccessful experiment with democracy—the Weimar Republic—accompanied by the rise of Hitler's Nazi movement, which culminated in the Third Reich and the Second World War.

Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 313 18th-Century England, 1714-1830

The emergence of Modern England: aristocracy and parliamentary rule; wars for empire; hierarchical society and industrialism; the Augustan and Romantic ages; evangelical revival; French Revolution and reaction. The age of Chatham, Wesley, Burke, Johnson, Adam Smith, Bentham, Wordsworth, Coleridge, and Shelley.

Alternate years, 3 credits (not offered in 1986-87)

HIS 314 Victorian England, 1830-1901

The era of British economic and political preeminence. The establishment of a modern industrial society, flowering of liberalism, imperial expansion, rise of democracy and socialism. The age of Gladstone and Disraeli; Dickens and Kipling; Mill, Darwin, and Marx.

Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 315 20th-Century Britain

The decline and fall of British preeminence and imperial power. The crisis of liberalism, two world wars, trade unionism, socialism, and the welfare state. The age of Lloyd George and Churchill; Shaw; Russell, Orwell, and Keynes.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 316 The Healer and the Witch in History

Female healers, their association with "diabolic" powers, and the progressive development of a mechanism for their repression and control. The course will also treat the development of organized medicine and its impact upon female healers and patients.

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 317 Expansion of Europe

The European influence on the wider world during the industrial age. Forms of European overseas settlement, conditions of conquest, local responses to European domination, and decolonization will be studied. The course emphasizes comparisons and original documents.

Prerequisite: 200-level course on modern Europe
Fall or spring, 3 credits

HIS 318 Social and Intellectual History of Europe

An examination of the great movements of ideas in their social and historical contexts in modern European history. Sample themes include liberalism, conservatism, romanticism, 19th-century realism, and the discovery of the unconscious.

Alternate years, 3 credits (not offered in 1986-87)

HIS 319 U.S. Urban History

Historical studies of urbanization in the United States, with special reference to population growth and economic activities, the government and changing organization of urban settlements, and the rise of planning.

Prerequisites: HIS 103, 104
Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 320 Advanced Ancient History

An examination of selected periods or topics in ancient Greek and Roman history with emphasis on the evidence of the ancient sources and the modern scholarly discussion.

Prerequisite: HIS 231 or 232
Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 322 History of Astrology through the 17th Century

The development of astrology and astronomy in their cultural setting with emphasis on the

period from ancient times to the Scientific Revolution in the 17th century. The course is not concerned with astrology as a belief system, but as it existed in the historical and scientific cultures of the times. Works by Ptolemy, Brahe, Kepler, John Dee, and William Lilly will be studied as well as modern historical commentaries on the discipline and its practice.

Prerequisite: One course in European history or in the history of science

Alternate years, 3 credits (not offered in 1985-86)

HIS 323 History of Medicine

The history of medicine from Hippocrates to the present. Three major themes will be traced throughout this period: (1) ideas (theories of disease, therapeutics); (2) institutions (hospitals, role of state, role of corporate sector); (3) people (practitioners, patients, scientists).

Alternate years, 3 credits (not offered in 1986-87)

HIS 325 The Civil Rights Movement

A detailed study of the movement for civil rights from its origins, examining the establishment of the NAACP, race relations between whites and blacks since 1900, the role of the Supreme Court and the federal government, and the turn to militancy in the 1950s and after. Crosslisted with AFS 325.

Fall, 3 credits

HIS 327 The Culture of American Cities

The character of American culture from the Civil War to the present and its changes will be illustrated and discussed. Special attention will be given to the city as a cultural habitat and to the social and visual arts: theatre, film, and architecture. The examples chosen for study will necessarily be selective and are designed to suggest how popular culture was expressed at a particular time.

Prerequisites: One history course; one art history or English literature or philosophy course

Fall, 3 credits

HIS 328 American Constitutional Origins

An examination of the English and colonial foundations of American constitutionalism, the political thought of the Revolution and creation of republican governments, the formation of the federal Constitution, and the rise of 19th-century political democracy in the United States.

Prerequisite: HIS 103 recommended

Fall, 3 credits

HIS 329 American Constitutional Development

A study of constitutional change ranging from the dispute over the nature of the Union in the 19th century through the Civil War and Reconstruction, and the problems associated with industrial growth, to the rise of big government in the present century.

Spring, 3 credits

HIS 330 Latin American Society

An examination of the basic elements in the evolution of Latin American society since independence. Topics will include authoritarianism, social control, social deviance, and role of the middle class, the Church, and education.

Fall or spring, 3 credits

HIS 331 Cultural and Intellectual History of Latin America

A thematic study of major currents in Latin American cultural and intellectual history, emphasizing the competition between indigenous cultural influences and the foreign influences imparted by European *conquistadores* and settlers. The course will consider, in depth, such themes as *indigenismo*, *hispanidad*, positivism, modernism, and cultural nationalism. Major works of Latin American authors will be read in translation and analyzed.

Fall, 3 credits

HIS 332 Politics and Political Change in Latin America (formerly HIS 333)

An examination of revolutionary and reformist movements that have shaped the political, social, and economic contours of 20th-century Latin America. Topics include the Mexican and Cuban revolutions, populism, urban squatter movements, and guerilla warfare.

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 334 Modern Brazil

The history of Brazil since independence, stressing such themes as slavery and race relations, industrialization and the working class, populist politics, urban society and culture, and the rise of authoritarianism.

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 335 Women, Development, and Revolution in Latin America

Gender relations in Latin America, particularly in contemporary societies undergoing rapid social, economic, and political change. The course considers women, work, and family in historical perspective as well as the impact of agrarian change, migration, and industrialization on

women. A major focus will be on women in political protest and revolution.

Prerequisite: One course in history or women's studies

Alternate years, 3 credits (not offered in 1985-86)

HIS 337 The Hapsburg Empire, 1867-1918

An examination of Austria-Hungary in the age of imperialism. Major topics will be the adaptation and resistance to social change; economic development in East Central Europe; the rise of mass movements; the shaping of new national societies in a multinational structure; and the significance of Vienna in 20th-century culture.

Prerequisite: HIS 102

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 338 Modern Russian Intellectual History

The development of modern Russian thought from the Enlightenment of the late 18th century until the revolution of 1917.

Emphasis will be placed on the relationship between ideas and society as well as the role of ideas in leading to the revolution of 1917. Political and social ideas (such as gentry radicalism, Hegelianism, nihilism, populism, Marxism, and anarchism), will be given consideration primarily, but aesthetic and literary concepts will receive attention as well.

Prerequisite: At least one course in modern European history

Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 339 Russian Social History, 1825-1929

An in-depth review of the transformation of Russian society "from the bottom up." The course will examine the effects of economic and social transformation on large socioeconomic groups in Russia from the end of the old society, through the emancipation of the serfs, to industrialization. It will then proceed to the revolutionary years of 1905-1917 and to the past revolutionary era to examine how the turmoil and the new society affected the lives of common people in Russia.

Prerequisite: At least one course in modern European history

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 340 Intellectual History of China

A survey of major intellectual trends from ancient to contemporary China. Topics of discussion include the rise of ancient Chinese philosophical schools, the establishment of Confucian orthodoxy, the introduction of Buddhist thought, the neo-Confucian synthesis, and the impact of Western ideologies on modern China.

Alternate years, 3 credits (not offered in 1986-87)

HIS 341 20th-Century China

The history of China from the collapse of the monarchy to the triumph of communism, emphasizing the revolutionary, political, social, and economic changes in China today. Special attention will be given to the theory and practice of Chinese communism. *Fall or spring, 3 credits*

HIS 344 20th-Century Japan

The history of Japan from the beginning of its imperialistic expansion in 1895 to World War II and post-war reconstruction, including such contemporary topics as educational issues, economic policies, and foreign relations.

Prerequisite: HIS 220 recommended
Alternate years, 3 credits (not offered in 1985-86)

HIS 345 Imperial Spain, 1492-1759

An examination of Spain's social, economic, and cultural history during several centuries of imperial rule. Topics will include: the defeat of the Moors and expansion of Christian Spain; the birth of world empire with the discovery and conquest of the New World; and the crisis and demise of Spanish imperialism.

Prerequisite: HIS 101 recommended
Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 346 Modern Spain: 1759 to Present

An examination of social, economic, and political aspects of Spanish development from the enlightenment to Franco. Special emphasis will be placed on population, land, and industry; the collapse of colonial power; regionalism vs. centralism; class formation and conflict; ideologies, social movements, and political parties; the crisis of the state.

Prerequisite: HIS 102 recommended
Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 351 The History of Biology

The development of some important biological fields (genetics, physiology, cytology, evolution theory, biochemistry) during the 19th and 20th centuries. The social context in which these fields developed as well as their social impact will be considered. May not be taken for credit in addition to the discontinued HIS/BIO 282.

Prerequisites: BIO 102 or 151, 152
Alternate years, 3 credits (not offered in 1985-86)

HIS 352 The Social History of Science

A consideration of some important topics on the function and development of science in Western society since 1600. Such topics will include science and government, science in warfare, industrial research, and the professionalization of science.

Prerequisite: HIS 102 or 136 or 292 or SOC 103

Alternate years, 3 credits (not offered in 1986-87)

HIS 353 The History of American Technology

The development of technology in the United States, from the colonial period to the present, considered in many contexts: internal development of a few selected technologies (such as iron and steel, food processing, etc.), as well as changes in economic conditions, social organization of work, and the impact of technological change on general culture.

Prerequisite: HIS 103 or 104 or 136 or 292
Fall, alternate years, 3 credits (not offered in 1985-86)

HIS 356 Zionism, 1848-1948

The Zionist movement as a facet of modern history. The course combines consideration of modern liberalism, nationalism, and socialism with attention to the distinctive features of Jewish assimilation and resistance to it, and the rise of a new Hebrew culture. Crosslisted with JDS 356.

Prerequisite: HIS/JDS 226
Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 360 Women in Premodern Europe (formerly HIS 242)

An examination of the position of women in European society from Ancient Greece through the Italian Renaissance. The course will emphasize women in the European middle ages—their roles in marriage and the economy, their relations with the Christian church, their significance in cultural forms such as courtly love.

Alternate years, 3 credits (not offered in 1986-87)

HIS 362 Marxist Thought before 1917

The roots of Marxism in the first half of the 19th century, the question of the young Marx, aspects of the work of the mature thinker and politician. The critiques of the Revisionists and the defense of orthodoxy; the development of Marxian traditions in various nations of Europe; early Leninism.

Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 363 Marxist Thought Since 1917

The major schools of Marxism since the Russian Revolution: Leninism, the return to Hegel, the Frankfurt School, Trotskyism and Stalinism, Structuralism, recent literature.

Prerequisite: HIS 362
Spring, alternate years, 3 credits (not offered in 1986-87)

HIS 367 Change and Reform in the United States, 1877-1919

The growth of industrialism in the United States, emphasizing its impact on politics,

society, and culture. Focus will be on the development of modern liberalism as a social and intellectual movement.

Prerequisite: HIS 103, 104

Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 369 American Social History to 1860

An analysis of American social history from the first settlements to the beginnings of industrialization with special emphasis on changes in social structure and institutions such as the community, family, church, and school.

Prerequisite: HIS 103

Fall, 3 credits

HIS 370 U.S. Social History, 1860-1929

The development of American society from the Civil War to the Great Depression, with special emphasis on the evolution of social institutions—primarily the family, church, school, welfare organizations, business, and professions—in response to industrial and urban growth.

Spring, 3 credits

HIS 371 American Roots

The roots of Americans through the immigration or migration experiences of WASPS, blacks, Irish, Germans, Slavs, Jews, Italians, Asians, and Latins will be examined, emphasizing common elements of the immigration process as well as the unique history of the racial and ethnic groups. Homeland conditions, migration experiences, rejection and assimilation in the new land, and generational conflict will form the main themes.

Prerequisites: HIS 103, 104 recommended
Fall, alternate years, 3 credits (not offered in 1986-87)

HIS 375 History of U.S. Foreign Relations to 1917

American foreign policy from the settlement of the first colonies to the emergency of the United States as a great power. Topics include the global context of America's attainment of independence, drives behind and obstacles to continental expansion, and America's response to revolutionary change abroad.

Fall, 3 credits

HIS 376 History of U.S. Foreign Relations Since 1917

The evolution of the United States from great power to superpower. Topics include the forms of American intervention abroad, uses of military and economic power in the global environment, and the role of domestic politics in the formulation of foreign policy.

Spring, 3 credits

HIS 377 American Economic History to 1860

The economic and social development of North America and the United States from

colonial settlement through early industrialization. The emphasis is on changing population patterns, use of natural resources, technological advances in production and transport, the development of markets, and the role of public policy. *Fall, alternate years, 3 credits (not offered in 1985-86)*

HIS 378 American Economic History Since 1860

The industrial transformation of the American economy and its consequences since 1860. Emphasis is on factors contributing to economic growth and instability, the development of corporate business organization, the changing character of governmental policies, and the international economy. *Spring, alternate years, 3 credits (not offered in 1985-86)*

HIS 379 American Legal History

The role of law and legal institutions in American society from the colonial period to the present with emphasis on the relations between the legal system and the processes of economic and social change in the United States.

Prerequisite: HIS 103 or 104

Spring, alternate years, 3 credits (not offered in 1985-86)

HIS 380 Origins of American Society

An inquiry into the origins of America's distinctive social order. Examining the complex process of development of the first European commercial and military outposts into a society, the course will focus on the related processes of democratization and commercialization, and their impact on labor, the economy, social relations, and the political system.

Prerequisite: HIS 103 or 262 or 263 or 266 or 369

Alternate years, 3 credits (not offered in 1986-87)

HIS 395 History of South Africa

An analysis of the development of South African society; expansion of white settlement since the 17th century; British imperialism, frontier conflicts, Afrikaner nationalism in the 19th century; patterns of race relations in the 20th century; apartheid and African resistance.

Prerequisite: HIS 295 recommended

Fall or spring, 3 credits

HIS 396 Intellectual Background of Third World Revolutions

A comparative treatment of the intellectual strategies by which "Third World" societies have dealt with European imperialism since the mid-19th century. Analysis of religious change, concepts of political power, tradition and westernization, social reform, nationalism, and revolution. Selected figures from Islamic, Indian, and African societies, with briefer

consideration of whether the resulting synthesis would fit East Asian or Latin American cases.

Prerequisites: Any course in non-Western history, political science, or religious studies. *Spring, alternate years, 3 credits (not offered in 1985-86)*

HIS 401, 402, 403 Colloquia in European History

Subjects and periods, which will vary with student demand and faculty interest, will include such topics as the Renaissance, the Reformation, Conservatism, the French and Russian Revolutions, Fascism, population, and topics in particular national histories. May be repeated.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits each*

HIS 409 Colloquium in Russian History

A seminar in Russian history intended for history majors and other students who have taken courses in Russian studies. The topics will vary from year to year, depending on the interests of the instructor. Emphasis will be placed on reading and discussion; lectures will be kept to a minimum. May be repeated as subject matter differs.

Prerequisite: HIS 209 or 210 or 338 or 339 *Schedule to be announced, 3 credits*

HIS 411-414 Colloquia in American History

Subjects and periods, which will vary with student demand and faculty interest, will include such topics as the history of New York, the westward movement, American socialism, the Vietnam War, U.S. military history, American utopianism, the urban novel, and women in the professions. May be repeated as subject matter differs.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits each*

HIS 421, 422 Colloquia in Latin American History

Subjects and periods, which will vary with student demand and faculty interest, will include such topics as slavery and race relations, culture and ideology, peasant movements and popular rebellion, and 20th-century revolutions. May be repeated as subject matter differs.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits each*

HIS 431 Colloquium in Asian History

Subjects and periods, which will vary with student demand and faculty interest, will include such topics as Japanese nationalism and expansion, Far Eastern diplomatic history, and nationalism in Southeast Asia. May be repeated as subject matter differs.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits*

HIS 441 Colloquium in World History

Subjects and periods, which will vary with student demand and faculty interest, will include such topics as the expansion of

Europe, theories of imperialism, revolutionary and religious movements, the psycho-analytical interpretation of history, and slavery. May be repeated as subject matter differs.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits*

HIS 447 Independent Readings in History

Intensive readings in history for qualified juniors and seniors under the close supervision of a faculty instructor on a topic to be chosen by the student in consultation with the faculty member. May be repeated, but no student will be allowed to enroll in this course more than once in a semester.

Prerequisites: A strong background in history; permission of instructor and department *Fall and spring, 1 to 3 credits*

HIS 451 Colloquium in Medieval History

Selected topics in medieval history will be studied with attention to primary sources and current historiographic controversies and developments. May be repeated as subject matter differs.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits*

HIS 461 Colloquium in the History of Science

Topics, which will vary with student demand and faculty interest, will include such subjects as the history of American science, the social history of science, the impact of Darwinism, modern physics, and technology and social change. May be repeated as subject matter differs.

Prerequisite: Permission of instructor *Schedule to be announced, 3 credits*

HIS 488 Internship

Participation in local, state, and national public and private agencies and organizations. Students will be required to submit written progress reports and a final written report on their experience to the faculty sponsor and the department. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in history; permission of instructor, department, and Office of Undergraduate Studies *Fall and spring, 3 to 12 credits*

HIS 495-496 Senior Honors Project in History

A two-semester project for history majors who are candidates for the degree with honors. Arranged in consultation with the department, the project involves independent study and the writing of a paper under the close supervision of an appropriate instructor on a suitable topic selected by the student. Students enrolled in HIS 495 are obliged to complete HIS 496.

Prerequisite: Admission to the history honors program *Fall and spring, 3 credits each semester*

Interdisciplinary Program in the Humanities

Professor

Harvey Gross, Program Director:
Comparative Literature

Assistant Professor

Carol Lasker, Director of Undergraduate
Studies: Comparative Literature

Teaching Assistants

Estimated number: 5

The Interdisciplinary Program in the Humanities is designed for undergraduates attracted to humanistic study—art, history, languages, literature, music, philosophy, religious studies, theatre—who prefer not to specialize in any single field. It involves introductory and upper-division work in several departments, described in the requirements below.

Potential majors are strongly urged to consult the Director of Undergraduate Studies to help them prepare individual programs.

Requirements for the Major in the Humanities

The interdisciplinary major in the humanities leads to the Bachelor of Arts degree. The following courses are required. All must be taken for a letter grade. In choosing courses to satisfy requirements I, II, and IV, the student majoring in humanities should be careful to consider the relevant prerequisites for the clusters chosen for requirement III.

- I. Two elementary courses (6 or 8 credits) in a foreign language not offered for college admission or one course above the elementary level (3 credits).
3 or 6-8 credits

- II. One course from *each* group lettered A-C below. The student's choice of courses to satisfy this requirement will influence his or her choice of clusters for requirement III below. Those clusters most directly related to the following introductory courses are listed in parentheses following the course number.
9 credits

Group A: Literature

HUM 107, 121-123

CLT 108 (All CLT courses in requirement III)

CLS/CLT 113 (Cluster A, requirement III)

CLT 201

EGL 204 (All EGL courses, requirement III)

Any survey course on foreign literature in the original language (Foreign literature courses in Requirement III)

Group B: The Arts

ARH 101 (ARH courses in Clusters A and B, requirement III)

ARH 102 (ARH courses in Clusters C-F, requirement III)

ARH 110 Honors Survey of Masterpieces of Art (All ARH courses in Clusters A-F, requirement III)

MUS 101 (All MUS courses, requirement III)

THR 281 (THR course in Cluster C, requirement III)

THR 282 (All THR courses in Cluster F, requirement III)

Group C: History and Philosophy

HUM 176

HIS 101 (HIS courses in Clusters B-D, requirement III)

HIS 102 (HIS courses in Clusters E and F, requirement III)

PHI 200 (PHI courses in Clusters A-C, requirement III)

PHI 206 (PHI courses in Clusters D-F, requirement III)

RLS 101 (RLS courses in Requirement III)

- III. From any two of clusters A-F below, a minimum of three courses from each cluster chosen. No more than one course from a single department may count toward the three courses required within a given cluster.

Note that the following list of courses is meant to be representative and does not exclude the possibility of substituting others in consultation with the student's advisor. In particular, there are available a number of additional courses that cover the chronological period of two adjacent clusters (especially of Clusters E and F).
18 credits

Cluster A: The Ancient World

ARH 207 Art of the Ancient Near East

ARH 300 Greek Art and Architecture

ARH 301 Roman Art and Architecture

ARH 317 Pre-Columbian Art

CLS 215 Classical Mythology

CLS 311 Classical Drama and Its Influences

CLS 313 The Classical Tradition

CLT/CLS 113 Greek and Latin Literature in Translation

EGL 261, 262 The Bible as Literature

GRK 251, 252 Readings in Greek Literature

HIS 230 The Ancient Near East

HIS 231 History of Greece

HIS 232 History of Rome

HIS 300 The Prehistoric Aegean

HIS 320 Advanced Ancient History

JDH 298 Midrash in Translation

JDS/HIS 225 Civilization of Israel I

LAT 353 Literature of the Roman Republic

LAT 354 Literature of the Roman Empire

PHI 111 Introduction to Eastern Philosophy: Classical Texts

PHI 112 Introduction to Eastern Philosophy: Interpretations

RLS 240 Confucianism and Taoism

RLS 260 Buddhism

RLS 270 Christianity

Cluster B: The Middle Ages

ARH 303 The Art and Architecture of the Early Middle Ages, Ca. 400-1050

- ARH 304 The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400
- EGL 300 Old English Literature
- EGL 302 Medieval Literature in English
- EGL 340 Chaucer
- HIS 233 Medieval History, 300-1100
- HIS 234 The High Middle Ages, 1100-1400
- HIS 303 Medieval Culture and Society
- LAT 355 Early Medieval Latin
- LAT 356 Late Medieval Latin
- PHI 304 Medieval Philosophy
- RLS 280 Islam
- RLS 321 Christian Classics
- RLS 370 Tibetan Buddhism
- RLS 372 Buddhist Classics
- Any course on medieval literature in a foreign language
- Cluster C: The Renaissance*
- ARH 211 The Early Renaissance in Italy
- ARH 307 High Renaissance and Mannerism in Central Italy
- ARH 337 Northern Renaissance Art
- CLT 211 Literary Survey: Medieval Through Renaissance
- EGL 241 Shakespeare I
- EGL 242 Shakespeare II
- EGL 243 Shakespeare: the Major Works
- EGL 304 Renaissance Literature in English
- EGL 341 Special Studies in Shakespeare
- EGL 344 Major Writers of the Renaissance Period in England
- HIS 235 Humanism and Renaissance
- HIS 236 The Age of Reformation
- THR 344 The Shakespearean Tradition
- Any course on Renaissance literature in a foreign language
- Cluster D: Classicism and Enlightenment*
- CLT 212 Literary Survey: Enlightenment through Modern
- ARH 320 Art of the 18th Century
- ARH 338 Baroque Art
- EGL 306 English Literature of the 17th Century
- EGL 308 The Age of Dryden
- EGL 310 Neoclassical Literature in English
- EGL 316 American Colonial and Federal Writers
- EGL 342 Milton
- EGL 347 Major Writers of the Neoclassical Period in England
- HIS 262 American Colonial Society
- HIS 263 Age of the American Revolution
- HIS 305 Early Modern England: Revolution and War, 1603-1714
- HIS 306 The Old Regime and the French Revolution
- MUS 301 Music of the Baroque
- MUS 302 The Music of J.S. Bach
- Any course on 17th- or 18th-century literature in a foreign language
- Cluster E: Romanticism and Realism*
- ARH 341 Art of the Nineteenth Century
- EGL 217 American Literature I
- EGL 312 Romantic Literature in English
- EGL 314 Victorian Literature
- EGL 318 19th-Century American Literature
- EGL 348 Major Writers of the Romantic Period in England
- EGL 349 Major Writers of the Victorian Period in England
- HIS 248 Europe, 1815-1914
- HIS 264 Birth of Modern America
- HIS 266 The Early National Era
- HIS 309 Modern France, 1815-1900
- HIS 337 The Hapsburg Empire, 1867-1918
- HIS 338 Modern Russian Intellectual History
- HIS 369 American Social History to 1860
- HIS 370 U.S. Social History, 1860-1929
- MUS 303 The Music of Beethoven
- MUS 305 Music in the Romantic Era
- MUS 307 Music and Drama
- PHI 308 19th-Century Philosophy
- Any course in 19th-century literature in a foreign language
- Cluster F: Modern Society*
- ARH 322 American Art Since 1947
- ARH 324 Modern Architecture and Design
- ARH 342 Art of the 20th Century
- CLT/EGL 266 The Modern Novel
- EGL 226 Contemporary English and American Literature
- EGL 350 Major Writers of American Literature
- EGL 352 Major Writers of Modern British and American Literature
- EGL 353 Major Writers of Contemporary British and American Literature
- HIS 210 Soviet Russia
- HIS 227 Modern Mexico
- HIS 249 Europe, 1914-1945
- HIS 250 The Second World War, 1939-1945
- HIS 251 Europe Since 1945
- HIS 268 Recent U.S. History, 1919 to the Present
- HIS 310 Modern France, 1900 to the Present
- HIS 315 20th-Century Britain
- HIS 334 Modern Brazil
- HIS 339 Russian Social History, 1825-1929
- HIS 341 20th-Century China
- JDH/RLS 230 Judaism
- JDH/RLS 465 Judaic Responses to Catastrophe
- JDS/HIS 241 The Holocaust: The Destruction of European Jewry, Causes and Consequences
- JDS/HIS 356 Zionism, 1848-1948
- MUS 107 History of Jazz
- MUS 109 Rock Music
- MUS 309 Music of the 20th Century
- PHI 247 Existentialism
- PHI 405 Analytic Philosophy
- PHI 408 Phenomenology
- RLS 122 Religion and Ethics Today
- RLS 246 Korean and Japanese Religions
- RLS 301 Sources and Methods
- RLS 302 Contemporary Theology
- RLS 341 Meditation and Enlightenment
- RLS 350 Philosophical Theology
- THR 314 Modern Drama on Stage
- THR 357 Topics in Media
- Any course in 20th-century literature in a foreign language
- IV. Any four additional courses from any department in the humanities division, of which at least two must be numbered 300 or above.
12 credits

 Total: 42-47 credits

Honors Program in Humanities

Humanities majors who have maintained a grade point average of 3.5 in the major and a 3.0 overall through their junior year may attempt the degree in humanities with honors.

The honors program requires an additional three credits above the 42 to 47 required for the major. These three additional credits will be earned in a special research project pursued in the final semester of the senior year. The project involves the completion of a senior thesis.

Students who are eligible for the honors program must find an appropriate faculty member to act as thesis advisor. The student, with the approval of the supervising faculty member, must submit a proposal of the project in writing to the Program Director by the last day of classes of the first semester of the senior year. Students who have obtained permission from the Program Director to pursue the project must enroll in HUM 495 while writing the thesis.

The thesis will be evaluated by the thesis advisor, and two members of the Humanities faculty chosen by the student with the approval of the thesis advisor.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

HUM 100 Honors Seminar in Imaginative Writing

Experiments in writing poems, fiction, and plays of several sorts. Exercises to develop facility with words. Students should be prepared to do a great deal of writing.
Prerequisites: Permission of Theatre Arts Department; priority given to Scholar Incentives students

Fall, 3 credits

HUM 107 The Literature of Commitment

A study of works in several national literatures tending to illustrate the concern for social and political commitment of the artist. The writer is viewed as the "living conscience" addressing important issues of his or her time and of all times.

Fall, 3 credits

HUM 121 Death in Literature

Through discussion of representative contemporary and classical texts, this course addresses the topic of how human beings have chosen to live with one certainty of their existence, its eventual conclusion in death.

Fall, 3 credits

HUM 122 Images of Women in Fiction

An examination of a series of representations of women in world fiction ranging from the fantasy literature of the fairy tales to modern studies of women's changing social role and the rise of feminine self-consciousness.

Spring, 3 credits

HUM 123 Sin and Sexuality in Literature

Lectures and discussions will focus on the interpretation of the ideas of sexuality and of evil by exploring literary treatments of such notions as sexual gratification, adultery, and deviance.

Fall and spring, 3 credits

HUM 176 Freedom, Consent, and Human Values

This course seeks to establish the minimal features essential to a contemporary philosophy of freedom. Topics include the centrality of freedom, personal and social freedom, freedom and necessity, civil disobedience, freedom as a basic value.

Fall, 3 credits

HUM 291 Seminar on Contemporary Issues

(For course description, see alphabetical listing, Unaffiliated Courses.)

HUM 491 Seminar on Contemporary Issues

(For course description, see alphabetical listing, Unaffiliated Courses.)

HUM 495 Humanities Honors Project

A one-semester project for humanities majors who are candidates for the degree with honors. Arranged during the first semester of the senior year, to begin the following semester, the project involves independent study and the writing of a senior thesis under the close supervision of an appropriate faculty member.

Prerequisites: Permission of instructor and Program Director

Fall and spring, 3 credits

Journalism

Minor Coordinator

Susan Squier (English)

The journalism minor (JRN), housed in the Department of English, is staffed by professional, working journalists. Students who have an interest in careers in journalism will find that the program is committed to an academically sound background in arts and sciences, develops the writing and editing skills needed in journalism, and fosters understanding of the principles and responsibilities of journalism.

Requirements for the Minor in Journalism

The minor consists of successfully completing 18 credits from the following courses:

	<i>Credits</i>
A. EGL 287 Newswriting I	3
B. EGL 288 Feature Writing I	3
C. EGL 289 Readings in Journalism	3
D. EGL 387 Newswriting II	3
E. EGL 388 Feature Writing II	3
F. EGL 393, 394 Practicum in Journalism	6

Note: All courses for the minor must be taken for a letter grade. Students interested in minoring in journalism should consult the minor coordinator.

Judaic Studies

Professor

Harvey Gross, Director, Ph.D., University of Michigan: Prosody and poetic theory; modern intellectual history.

Associate Professor

Robert Goldenberg, Ph.D., Brown University: Jewish thought; history of Judaism; Talmudic literature.

Assistant Professors

Robert Hoberman, Minor Coordinator, Ph.D., University of Chicago: Linguistic theory; Hebrew; Arabic; Aramaic.

Carole Kessner, part-time, Ph.D., State University of New York at Stony Brook: 17th-century English literature; Bible; modern Jewish literature and culture.

Lecturer

Yona Shapira, part-time, B.A., Tel-Aviv University: Hebrew language.

Affiliated Faculty

Samuel Berr, Germanic and Slavic Languages and Literatures: Yiddish.

Stephen Spector, English: Anti-Semitism; the Jews in literature.

Ruben E. Weltsch, History: Zionism.

The minor in Judaic Studies offers students an opportunity to acquire background in one or more Jewish languages and to study selected areas of Jewish history, culture, or religion. With the approval of an advisor from the Judaic Studies Program faculty, the student must construct a program of at least 21 credits fulfilling the requirements listed below. The advisor will help assure that the student's program has a curricular focus; courses from other departments that suit that focus may be included.

Requirements for the Minor in Judaic Studies

	Credits
1. One year of a Jewish language (Hebrew or Yiddish) at a level appropriate to the student's previous background	6
2. Two of the following: JDS 225, JDS 226, JDS 230	6
3. Three courses numbered 300 or higher approved in advance by the minor advisor.	9
Total	21

Requirement 3 may be satisfied by courses in the Judaic Studies Program itself or by related courses in other departments, if the subject is judged appropriate for the student's field of concentration. The following list of courses from other departments is meant to be representative and does not exclude the possibility of substituting others with the approval of the student's advisor.

- ANT 318 Peoples of the Middle East
- ANT 360 Ancient Mesopotamia
- ANT 402 Problems in Archeology
- ANT 410 Problems in Ethnology
- POL 308 Politics of Conflict: The Middle East
- RLS 301 Sources and Methods
- RLS 302 Contemporary Theology
- RLS 350 Philosophical Theology

Appropriate topics from any directed readings course and the following:

- EGL 374 Literature in English and Its Relation to Other Disciplines
- RLS 330 Special Topics

No more than one course for the minor may be taken for a grade of P. Students interested in enrolling in the minor must consult with the coordinator of the minor in Judaic Studies and select an advisor from the faculty of the Judaic Studies Program.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Courses designated HBW (191 and higher) and JDH are appropriate to satisfy the college distribution requirement in arts and humanities; courses designated JDS are appropriate for the requirement in social and behavioral sciences.

HBW 111, 112 Elementary Hebrew

An introduction to modern Hebrew as currently spoken and written in Israel, stressing pronunciation, speaking, listening comprehension, reading, and writing. No student who has had two or more years of Hebrew in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for HBW 111 without written permission from the supervisor of the course.

Fall (111) and spring (112), 3 credits each semester

HBW 115 Introduction to Classical Hebrew

The fundamentals of classical Hebrew grammar and syntax, with readings in Biblical prose narrative. This course will enable students to read classical Biblical and post-Biblical texts; it does not teach modern conversational Hebrew.

Fall, alternate years, 3 credits (not offered in 1986-87)

HBW 116 Biblical Narrative Prose

Readings from the Hebrew Bible in Hebrew emphasizing the simplest and most straightforward of the various genres it contains. Materials will progress from short selections to the analysis of entire books.

Prerequisite: HBW 115

Spring, alternate years, 3 credits (not offered in 1986-87)

HBW 191, 192 Intermediate Hebrew

An intermediate course in conversation, composition, and the reading of texts in modern Hebrew.

Prerequisite: HBW 112

Fall (191) and spring (192), 3 credits

HBW 221 Advanced Hebrew I

A course in the active use of spoken and written Hebrew. Readings of classics in the Hebrew language. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 192

Fall, alternate years, 3 credits (not offered in 1985-86)

HBW 222 Advanced Hebrew II

Readings in modern Hebrew authors. Oral and written reports. Discussion is conducted mainly in Hebrew.

Prerequisite: HBW 192

Fall, alternate years, 3 credits (not offered in 1986-87)

HBW 305 Readings in 20th-Century Israeli Authors

Readings and discussions of the short stories of two generations of representative Israeli masters including Agnon, Hazzaz, Yizhar, and Megged. Different authors will be studied each semester. The course will acquaint students with the ideological, cultural, and literary background of the literature of Israel. May be repeated once.

Prerequisite: HBW 221

Spring, alternate years, 3 credits (not offered in 1985-86)

HBW 315 The History of the Hebrew Language

Readings and discussion (in Hebrew) of selections from Biblical, post-Biblical, and modern literature; lectures and discussion (in English) on the changes of sentence structure, meaning, sound, and style from one period to another. Particular attention is given to classicism, innovation, and restructuring in the rise of modern Hebrew.

Prerequisite: HBW 221

Spring, alternate years, 3 credits (not offered in 1986-87)

HBW 447 Directed Readings in Hebrew

Intensive study of a particular author, period, or genre of Hebrew literature in the original under close faculty supervision. May be repeated.

Prerequisite: Permission of director

Fall and spring, 1 to 4 credits

JDS 225 Civilization of Israel I

The course of Jewish history and the development of Judaism during the Persian, Hellenistic, and Roman periods (ca. 500 B.C.E.-ca. 500 C.E.). The course begins with the close of the Hebrew Bible, examines the varieties of Judaism which then arose, and ends with the consolidation of rabbinic Judaism on one hand and of Christianity on the other. Crosslisted with HIS 225.

Fall, 3 credits

JDS 226 Civilization of Israel II

The history of the Jews and of Judaism since the fall of the Roman Empire and the rise of Islam. The course concludes with a study of the Holocaust and the creation of the State of Israel, and includes a survey of the major forms of American Jewish life. Crosslisted with HIS 226.

Spring, 3 credits

JDH 230 Judaism

A critical introduction to the scripture, the oral law, the traditions, the history, and the religious practices and beliefs of Judaism. Crosslisted with RLS 230.

Fall, alternate years, 3 credits (not offered in 1985-86)

JDS 241 The Holocaust: The Destruction of European Jewry—Causes and Consequences

The rise of modern anti-Semitism and its political application in Nazi Germany. Topics covered include the destruction process, ghetto life, resistance, foreign response, and the war crimes trials. Crosslisted with HIS 241.

Prerequisite: JDS/HIS 226

Alternate years, 3 credits (not offered in 1985-86)

JDH 298 Midrash in Translation

Selected passages from classical rabbinic exposition of the Bible, chosen for intrinsic interest and for their value for understanding classical Judaism. Each passage will be examined with a view to its underlying theology and its techniques for interpreting Scripture, as well as with attention to the historical milieu from which the texts emerged.

Spring, alternate years, 3 credits (not offered in 1985-86)

JDH 320 The Rabbinic Tradition

The origin and development of the rabbinic tradition, examination of the chief elements of rabbinic teaching at various times, and analysis of the major types of rabbinic literature. Crosslisted with RLS 320.

Prerequisite: JDS/HIS 225 or 226 or RLS/JDH 230

Fall, alternate years, 3 credits (not offered in 1986-87)

JDS 356 Zionism, 1848-1948

The Zionist movement as a facet of modern history. The course combines consideration of modern liberalism, nationalism, and socialism with attention to the distinctive features of Jewish assimilation and

resistance to it, and the rise of a new Hebrew culture. Crosslisted with HIS 356.

Prerequisite: HIS/JDS 226

Fall, alternate years, 3 credits (not offered in 1986-87)

JDH 390 Topics in Judaic Studies

An examination of a selected topic in Judaic studies within the humanities area to be announced whenever the course is offered. May be repeated for different topics.

Prerequisite: JDS/HIS 225 or 226 or RLS/JDH 230

Schedule to be announced, 3 credits

JDS 390 Topics in Judaic Studies

An examination of a selected topic in Judaic studies within the social sciences area to be announced whenever the course is offered. May be repeated for different topics.

Prerequisite: JDS/HIS 225 or 226

Schedule to be announced, 3 credits

JDH 447 Readings in Judaic Studies

Qualified juniors and seniors may read independently in the areas of Jewish religion, philosophy, and literature in an approved program under the supervision of a faculty member. May be repeated.

Prerequisites: Two JDH courses, or one course each in JDH and JDS; permission of Program Director

Fall and spring, 1 to 4 credits

JDS 447 Readings in Judaic Studies

Qualified juniors and seniors may read independently in the areas of Jewish history, culture, and society, in an approved program under the supervision of a faculty member. May be repeated.

Prerequisites: Two JDS courses, or one course each in JDS and JDH; permission of Program Director

Fall and spring, 1 to 4 credits

JDH 465 Judaic Responses to Catastrophe

The response of Judaic thinkers from the Bible to the Second World War to the problem of historical disaster and the need to understand and respond to it. Particular attention will be given to the question of long-term continuity and the appearance of innovation in such responses. Crosslisted with RLS 465.

Prerequisite: JDH/RLS 230 or JDS/HIS 225 or 226

Spring, alternate years, 3 credits (not offered in 1986-87)

The Liberal Arts Major Program

This major, which offers no courses of its own, allows the student to design his or her own program of study drawing on all the offerings of the University. It requires careful planning and should be undertaken only after thorough exploration of academic goals with advisors in the Center for Academic Advising.

Requirements for the Liberal Arts Major (LIB)

To fulfill the requirements for this major, which leads to a Bachelor of Arts degree, the student must complete 60 credits of work in courses numbered 200 and above. (In compliance with the University graduation requirement, at least 39 credits will be in courses numbered 300 and above.) The student must choose three areas or departments and distribute the 60 credits as follows:

	<i>Credits</i>
Department or area A	12
Department or area B	12
Department or area C	9
Any department(s) or area(s)	27
Total	60

Note: At least 45 of the 60 credits must be in courses in the College of Arts and Sciences. The number of Pass/No Credit credits attempted for the major is limited to 20 percent of such credits taken at Stony Brook.

Department of Linguistics

Professor

Aaron S. Carton, Director of Undergraduate Studies, Ph.D., Harvard University. Psycholinguistics; teaching English to speakers of other languages.

Associate Professors

Frank Anshen, Director of Graduate Studies, Ph.D., New York University: Sociolinguistics.

Mark Aronoff, Chairperson, Ph.D., Massachusetts Institute of Technology. Phonology; morphology.

Ellen Broselow, Ph.D., University of Massachusetts: Phonetics, phonology, applied linguistics.

S.N. Sridhar, Ph.D., University of Illinois: Applied linguistics; Dravidian syntax.

Lecturer

Susan Ansara, M.A., New York University: Teaching English to speakers of other languages.

as a central human attribute. It offers courses of general interest as well as programs for students with specialized objectives. In accordance with the pattern developed in modern linguistic theory, courses are offered in three areas. The core area examines the units of human language and their structural relations. The peripheral area is concerned with physiological, psychological, and social problems of language use. The applied area is concerned with language education and includes the application of scientific linguistics in communication technology and language policy.

The major in linguistics serves either as preparation for graduate study or as an organizing theme for a rich undergraduate education. The minor in linguistics is a valuable supplement to many majors offered on campus. The Department of Linguistics also prepares students for provisional certification as teachers of English to speakers of other languages (TESOL).

Instruction in uncommonly taught languages not offered elsewhere in the University is provided by the Department of Linguistics.

Requirements for the Major in Linguistics

The major in linguistics leads to the Bachelor of Arts degree. The following courses are required.

	<i>Credits</i>
1. LIN 101 Introduction to Linguistics and LIN 211 Introduction to Syntax.	6
2. Seven additional linguistics courses to be selected after consultation with the student's advisor. These should include LIN 201, 301, 311, and 321.	21
3. One year of a non-European language. This requirement may be met by CHI 111, 112; HBW 111, 112; LAN 111, 112; SKT 111, 112.	6
4. Two years of a modern foreign language. (Students should bear in mind that graduate programs in linguistics usually require reading proficiency in both German and French.)	12
Total	45

Note: All linguistics courses must be taken for a letter grade.

The attention of students majoring in linguistics is directed to the following

The Department of Linguistics is concerned with the study of language

courses of interest to them in other departments:

ANT 102, 203, 304, 354, 371
 CSE 113, 114
 EEL 111, 112, 394
 EGL 207, 300, 302
 FLA 339
 GER 201, 338
 PHI 220, 325
 PSY 370
 RUS 302, 339
 SPN 462, 463
 SWE 111, 112

Requirements for the Minor in Linguistics

LIN 101 Introduction to Linguistics
 LIN 201 Phonetics
 LIN 211 Introduction to Syntax
 and four linguistics courses, of which at least three must be at the upper-division level.

Note: One of the courses required for the minor may be taken for Pass/No Credit.

Linguistics minors that are closely integrated with students' majors are strongly encouraged. The fields with which linguistics has special affinities are anthropology, history, sociology, English, foreign languages, philosophy, and computer science.

Students must consult with the Director of Undergraduate Studies in Linguistics to enroll in the minor.

Teacher Preparation (TESOL)

The program outlined below leads to provisional certification in Teaching English to Speakers of Other Languages (TESOL), from kindergarten to grade twelve.

Requirements

- A. Courses in linguistics and social and anthropological aspects of language: LIN 101, 201, and 305 and one course from a list of applicable courses available from the Director of Undergraduate Studies in Linguistics
- B. Language study:
 Twelve college-level credits (or College proficiency plus six credits) of a standard, average European language (e.g., French, German, Italian, Russian, Spanish, Swedish, etc.) and six credits of non-European language

- C. Courses in professional education: SSI 265 Drug and Alcohol Education, SSI 350 Foundations of Education, LIN 375, 376, 450 (student teaching), and 454 (student teaching seminar)
- D. English Proficiency
 In addition to meeting the University writing requirement, candidates for TESOL certification are required to pass a test of standard spoken English.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Uncommonly Taught Languages

LAN 111, 112 Selected Languages (Elementary) (formerly LIN 115, 116)

An introduction to a language not offered elsewhere in the University; speaking, comprehension, reading, and writing. Selected texts will be read. Practice in the language laboratory supplements class work. May be repeated for different languages. No student who has had two or more years of the language offered in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN 111 without written permission from the supervisor of the course.
Prerequisite to LAN 112: LAN 111
Schedule to be announced, 3 credits each semester

LAN 191, 192 Selected Languages (Intermediate)

Continued study of a language not offered elsewhere in the University; advanced speaking, comprehension, reading, writing, and grammar. Selected texts will be read. Practice in the language laboratory supplements class work. May be repeated for different languages. No student who has had four years of the language offered in high school (or who has otherwise acquired an equivalent proficiency) may receive credit for LAN 191, 192 without written permission from the supervisor of the course.
Prerequisite to LAN 191: LAN 112
Prerequisite to LAN 192: LAN 191
Schedule to be announced, 3 credits each semester

Linguistics

LIN 101 Introduction to Linguistics

An introduction to the fundamental areas and concepts of modern linguistics. Sounds and

their structure, word structure, and sentence structure will be discussed. Other topics covered may include historical linguistics (how languages change over time), dialects, writing systems, and psycholinguistics (especially the question of how children acquire a language).

Fall and spring, 3 credits

LIN 121 The Structure of English Words

An introduction to methods of linguistic analysis through the analysis of complex English words. Students will gain some understanding of such areas of linguistics as morphology, semantics, and historical linguistics as well as increase their English vocabulary.

Fall and spring, 3 credits

LIN 201 Phonetics

Introduction to the sounds used in human language and their production. Practice will be included in the production and recognition of the more commonly used sounds of the languages of the world; the structure of the human vocal tract, including the larynx, and the physical properties of sounds are discussed.

Prerequisite: LIN 101

Fall, 3 credits

LIN 211 Introduction to Syntax

An introduction to transformational-generative grammar: the formal theory of sentence structure.

Fall and spring, 3 credits

LIN 301 Phonology

The theory of sound systems of languages and the interaction of sounds in language.

Prerequisite: LIN 201

Spring, 3 credits

LIN 305 Introduction to Sociolinguistics

An examination of the interaction between language and society. Examples will be drawn largely from English.

Prerequisites: LIN 101 and 211

Fall, alternate years; 3 credits (not offered in 1985-86)

LIN 311 Advanced Syntax

A detailed consideration of syntactic problems in English and other languages. Introduction to generative semantics.

Prerequisite: LIN 211

Fall, 3 credits

LIN 320 Psycholinguistics

An examination of the psychology of language and the relations among languages, behavior, and cognitive processes.

Prerequisites: LIN 101 and 211

Fall, alternate years, 3 credits (not offered in 1985-86)

LIN 321 Linguistic Analysis

The application of methods of linguistic analysis to major bodies of data from a variety of languages.

Prerequisites: LIN 211 and 301
Spring, alternate years, 3 credits (not offered in 1986-87)

LIN 330 Language Acquisition

Introduction to the field of language acquisition. Issues include cognitive processes, role of innate ability and environment, developmental stages, individual variation, universal tendencies, interaction of language and cognition, bilingualism, similarities and differences between first- and second-language acquisition, and language disorders.

Prerequisites: LIN 101 and one 200-level LIN course
Spring, alternate years, 3 credits (not offered in 1986-87)

LIN 333 Mathematical Aspects of Linguistics

An introduction to the mathematical concepts and procedures that underlie much contemporary linguistic practice.

Prerequisite: LIN 211
Alternate years, 3 credits (not offered in 1985-86)

LIN 340 Introduction to Historical Linguistic Methodology

The application of linguistic theory to the comparative reconstruction of language systems.

Prerequisites: LIN 211 and 301
Fall, alternate years, 3 credits (not offered in 1986-87)

LIN 342 The Development of Linguistics in the 20th Century

The major advances in linguistics from Saussure to Ross.

Prerequisites: LIN 101, 211, and 301
Fall, alternate years, 3 credits (not offered in 1985-86)

LIN 351 Advanced Phonology

A direct sequel to LIN 301, covering advanced phonological theory and recent developments in phonology and related areas.

Prerequisite: LIN 301
Fall, alternate years, 3 credits (not offered in 1985-86)

LIN 363 Language and Culture

The study of linguistic behavior and its interrelationship with other aspects of culture. Topics include sociolinguistics, language acquisition, nonverbal behavior, and linguistic acculturation. Crosslisted with ANT 363.

Prerequisites: LIN 101 or ANT 102 or 103; one other anthropology course
Spring, 3 credits

LIN 375 Methods and Materials of Teaching English as a Second Language

The application of linguistic methodology to teaching English to non-native speakers. The course involves current review of ESL teaching materials applicable to all levels. Students will be given an opportunity to observe TESL classes on campus.

Prerequisites: LIN 101; two years of a modern foreign language
Spring, 3 credits

LIN 376 Principles of Language Testing

The principles, methods, functions, uses, and commonly encountered misuses in: (a) assessing aptitude for acquiring a second language, (b) measuring achievement in foreign language study, (c) assessing the ability to communicate within one's native linguistic community or in a foreign community, and (d) the use of tests in research and evaluation.

Prerequisite: LIN 375 or FLA 339
Spring, alternate years, 3 credits (not offered in 1985-86)

LIN 405 Field Methods in Sociolinguistics

Problems of sampling, interview techniques, construction and scoring of linguistic variables, and presentation of results will be studied in the context of a study by the class of the sociolinguistic patterns of a nearby community.

Prerequisite: LIN 305
Spring, alternate years, 3 credits (not offered in 1985-86)

LIN 421 Field Methods in Linguistics

Students will learn techniques of writing a grammar of a language unknown to them by working with a speaker of that language.

Prerequisites: LIN 201 and 211
Alternate years, 3 credits (not offered in 1985-86)

LIN 425 Special Topics in Linguistics

A seminar for advanced linguistics students, the topic of which will vary with student demand and faculty interest. Topics in the past have included animal communication, Creoles, semantics, stylistics, and symbolization. Topics will be announced each semester. The course may be repeated if the topic differs.

Prerequisite: Varying with subject matter
Schedule to be announced, 3 credits

LIN 431 The Structure of an Uncommonly Taught Language

An investigation of the phonology and syntax of either some language or some family of languages. May be repeated if a different language is covered.

Prerequisites: LIN 301, 311, and 321
Alternate years, 3 credits (not offered in 1985-86)

LIN 447 Directed Readings in Linguistics

Qualified juniors and seniors in linguistics will be offered an opportunity to do independent work on topics in linguistics under the guidance of a faculty member. May be repeated.

Prerequisite: Permission of department
Fall and spring, 1 to 4 credits

LIN 450 Supervised Student Teaching in English as a Second Language

Supervised practice teaching in English as a second language by arrangement with selected Boards of Cooperative Educational Services and primary, middle, and secondary schools. Applications must be filed in the semester preceding that in which the student plans to take the course. Satisfactory/Unsatisfactory grading only.

Prerequisites: Enrollment in TESOL Program; permission of department
Corequisite: LIN 454
Fall or spring, 3 credits

LIN 454 Student Teaching Seminar in English as a Second Language

Seminar on problems and issues of teaching English as a second language at the elementary, middle, and secondary school levels. Analysis of actual problems and issues encountered during the student teaching experience.

Corequisite: LIN 450
Fall or spring, 3 credits

LIN 475 Practicum in Teaching English as a Second Language—Oral/Aural Skills

Students will have the opportunity to apply the methodology learned in LIN 375 in small tutorial sections under the direction of a master teacher. They will work with students in the oral/aural ESL courses, emphasizing communicative competency. There will be a seminar component to the course, meeting weekly. Satisfactory/Unsatisfactory grading only.

Prerequisites: LIN 375; permission of instructor
Fall, 3 credits

LIN 476 Practicum in Teaching English as a Second Language—Reading/Composition Skills

Students will have the opportunity to apply the methodology learned in LIN 375 in small tutorial sections under the direction of a master teacher. They will work with students in the reading/composition skills ESL courses, emphasizing preparation for university writing. Satisfactory/Unsatisfactory grading only.

Prerequisites: LIN 375; permission of instructor
Spring, 3 credits

Department of Mathematics

Professors

Alfred Adler, Ph.D., University of California, Los Angeles: Differential geometry and mathematical economics.

William Barcus, Ph.D., Oxford University: Algebraic topology.

Jeff Cheeger, Ph.D., Princeton University: Differential geometry.

Raouf Doss, Ph.D., University of Cairo: Harmonic analysis.

Ronald Douglas, Ph.D., Louisiana State University: Operator theory; functional analysis.

David Ebin, Ph.D., Massachusetts Institute of Technology: Global analysis.

Detlef Gromoll, Director of the Graduate Program, Ph.D., University of Bonn: Differential geometry.

C. Denson Hill, Ph.D., New York University: Partial differential equations; several complex variables.

Irwin Kra, Chairperson, Ph.D., Columbia University: Complex analysis; Kleinian groups.

Michio Kuga, Ph.D., University of Tokyo: Complex manifolds, algebraic groups.

Paul G. Kumpel, Director of the Undergraduate Program, Ph.D., Brown University: Algebraic topology.

Henry Laufer, Ph.D., Princeton University: Several complex variables.

H. Blaine Lawson, Ph.D., Stanford University: Differential geometry; topology.

William Lister, Ph.D., Yale University: Algebra.

Bernard Maskit, Ph.D., New York University: Complex analysis; Kleinian groups.

M. Dusa McDuff, Ph.D., University of Cambridge: Operator theory; topology.

Anthony Phillips, Ph.D., Princeton University: Differential topology.

Joel Pincus, Ph.D., New York University: Operator theory and integral equations.

Chih-Han Sah, Ph.D., Princeton University: Group theory and its applications.

Joel Spencer, Ph.D., Harvard University: Combinatorics.

E. Rapaport Strasser, Emeritus, Ph.D., New York University: Combinatorial group theory.

Peter Szusz, Ph.D., University of Budapest: Analytic number theory.

Michael Taylor, Ph.D., University of California, Berkeley: Partial differential equations.

John Thorpe, Ph.D., Columbia University: Differential geometry. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1972-73

Associate Professors

William Fox, Ph.D., University of Michigan: Complex analysis.

Daryl Geller, Ph.D., Princeton University: Real analysis.

Lowell Jones, Ph.D., Yale University: Topology.

Marie-Louise Michelsohn, Ph.D., University of Chicago: Topology; differential geometry.

Nicolae Teleman, Ph.D., Massachusetts Institute of Technology: Differential geometry.

Eugene Zaustinsky, Ph.D., University of Southern California: Differential geometry.

Assistant Professors

Donald Brittain, Ph.D., University of Pennsylvania: Differential geometry.

Jane Hawkins, Ph.D., University of Warwick: Ergodic theory.

Eric Jablow, Ph.D., Princeton University: Complex analysis.

Claude Le Brun, Ph.D., Oxford University: Mathematical physics and differential geometry.

Yevsey A. Nisnevich, Ph.D., Harvard University: Algebra.

Ralf Spatzier, Ph.D., University of Warwick: Ergodic theory.

Kaising Tso, Ph.D., New York University: Partial differential equations.

Lecturer

Eugene Vinograd, part-time, M.A., New York University: Mathematics education.

Teaching Assistants

Estimated number: 60

individualized programs of study consistent with their career objectives. Students are encouraged to explore the various branches of pure and applied mathematics, as well as other mathematically oriented disciplines, in order to gain both breadth of knowledge and insight into possible career options. Double majors between mathematics and other fields, such as physics, computer science, applied mathematics, and economics, are common and are encouraged.

Within the mathematics major there are three standard tracks. The *general mathematics program* is for students interested primarily in the applications of mathematics to other fields. It allows the greatest flexibility in planning courses of study. The *secondary teacher option* (see p. 45) is for students planning a career teaching mathematics in the secondary schools. The *honors program* is for students preparing to enter a Ph.D. program in mathematics or theoretical physics.

Mathematics advisors are available in the Undergraduate Mathematics Office to help students plan programs and assess career goals. Advising hours can be obtained by calling the Department of Mathematics.

Requirements for the Major in Mathematics

The major in mathematics leads to the Bachelor of Science degree. The following courses are required:

	Credits
1. A sequence of courses in one-variable calculus: MAT 125, 126, 127 or 131, 132 or 141, 142	8-9
2. A course in linear algebra/differential equations: MAT 231 or 241 (MAT 221 is an acceptable substitute)	3
3. A course that includes an introduction to computer programming: MAT 251 or CSE 111 or CSE 114 or equivalent	3

The requirements for the major in mathematics allow students to construct

4. A course in multivariate calculus: MAT 306 or 307	3	upper-division courses in applied mathematics, chemistry, computer science, economics, and physics.
5. An upper-division course in algebra: MAT 310 or 313	3	At least four of the seven courses used to satisfy requirements 7 and 8 must be MAT courses
6. A course in advanced calculus: MAT 320 or 322 or 324 or 341 or 342	3	
7. Four additional courses chosen from two of the following areas (two courses from each chosen area, at most three courses outside the department):		
a. Advanced Calculus/Differential Equations: MAT 320, 322, 324, 335, 341, 342, 350, 353		
b. Algebra/Number Theory: MAT 310, 311, 313, 314, 315		
c. Applied Mathematics/Statistics: AMS 301, 350 or AMS 311, 312 or AMS 341, 342. (If two courses are chosen from this area, then they must be paired as indicated)		
d. Geometry/Topology: MAT 322, 360, 361, 362, 365		
e. Logic/Mathematics of Computer Science: MAT 371, 373; CSE 303, 352		
f. Mathematical Physics: PHY 301, 302 or PHY 301, 308 or PHY 303, 308 or PHY 303, 408. (If two courses are chosen from this area, then they must be paired as indicated)		
g. Mathematics of Computation: MAT 331, 332; AMS 326	12	
8. Three additional mathematics (or mathematics-related courses. These courses must be selected from a list of approved courses that is available in the Undergraduate Mathematics Office. Included on that list are all MAT courses numbered 310 or above (excluding 475), MAE 301, and several		
		9
	Total	44-45

Notes: (a) These requirements are in effect for students entering Stony Brook in September 1985 or later. Students who entered prior to September 1985 may complete either these requirements or those listed in the 1983-85 *Undergraduate Bulletin*. (b) All courses used to fulfill the requirements for the major must be taken for a letter grade and must be completed with a grade of C or higher.

Recommendations for Students Majoring in Mathematics

Students planning to major in mathematics may begin with any of the three one-variable calculus sequences: MAT 125, 126, 127, MAT 131, 132, or MAT 141, 142. In the sophomore year, mathematics majors normally take the second-year calculus sequence MAT 231, 306 together with MAT 251 and, in the spring semester, an upper-division course such as MAT 310 or 313. However, students who have completed the one-variable calculus sequence with excellent grades are encouraged to consider enrolling in the theoretically oriented second-year calculus sequence MAT 241, 307, rather than in the sequence MAT 231, 306. On completing the 241, 307 sequence, these students will be able to bypass the introductory course in analysis (MAT 320) and proceed directly into more advanced analysis courses, such as MAT 322 or 324.

Students majoring in mathematics are encouraged to include in their programs a year or more of physics, beginning with PHY 101, 102.

Honors Program in Mathematics

The honors program in mathematics is open to junior and senior mathematics majors who have maintained a 3.0 G.P.A. overall, and a 3.0 or more in the required courses for the major.

The program consists of the completion of a set of six courses,

including MAT 491 Senior Seminar. The six courses in the honors program normally are: MAT 314, 322, 335, 362, 365, and 491. Substitution of first-year graduate courses for the corresponding 300-level courses is permitted. Other variations must be approved by the Director of the Undergraduate Program in Mathematics. Conferral of honors is contingent on:

1. Completion of the set of six designated courses with an average of 3.5.
2. Active participation in Senior Seminar, including at least two lectures on a topic chosen by the professor in charge of Senior Seminar.
3. Approval for honors by both the student's Senior Seminar professor and the Director of the Undergraduate Program or a designee, both of whom will listen to and evaluate the two required lectures.

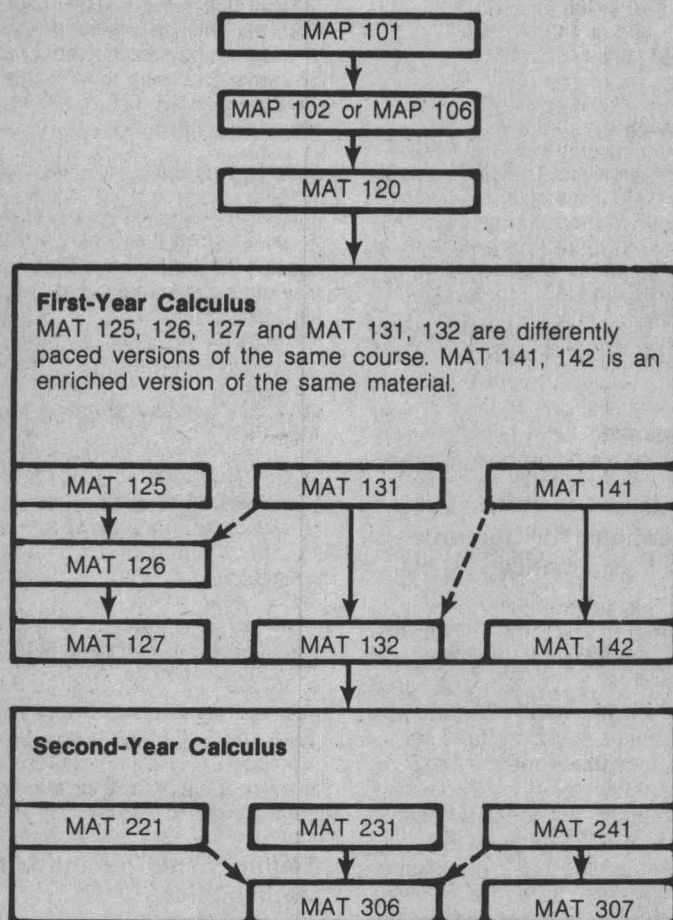
Note: Requirements 2 and 3 may be satisfied alternatively by participation in a graduate course or graduate seminar, including two lectures before a committee of at least two faculty members. Recommendation for honors is then subject to approval by this committee.

Requirements for the Minor in Mathematics

The minor in mathematics is available to all students not majoring in either mathematics or applied mathematics. The following courses are required:

1. MAT 221 or 231 or 241
2. MAT 306 or 307 or AMS 362
3. Four courses chosen from two of the following areas (two from each chosen area)
 - a. Advanced Calculus/Differential Equations: MAT 320, 322, 324, 335, 341, 342, 350, 353.
 - b. Algebra/Number Theory: MAT 310, 311, 313, 314, 315
 - c. Geometry/Topology: MAT 322, 360, 361, 362, 365
 - d. Logic/Theory of Algorithms: MAT 371, 373
 - e. Mathematics of Computation: MAT 331, 332
4. One additional MAT course numbered 310 or above.

Basic Mathematics Sequences



Notes

1. This is an outline—for more details, read the course descriptions.
2. *Caution:* Some majors require particular sequences.
3. Successful completion of any of the above courses except MAP 101 satisfies the mathematics proficiency requirement.
4. Incoming students usually begin at the first-year-calculus level. Students with a weak background in mathematics may begin with lower-level courses.
5. Either MAT 127 or 132 or 142 is an acceptable prerequisite for MAT 221 or 231 or 241. Either MAT 221 or 231 or 241 is an acceptable prerequisite for MAT 306.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Note: No mathematics course may be taken for credit after credit has been obtained in a course for which it is a prerequisite. Exceptions will be made only with written permission of the Director of the Undergraduate Program in Mathematics.

MAP 101 Fundamentals of Arithmetic and Algebra

Arithmetic: fractions, decimals, and percent. Algebra: signed numbers, monomials, linear equations in one unknown, and word problems. This course is intended for students who have never studied algebra. May not be counted toward the College requirement in natural science. Does not satisfy the mathematics proficiency requirement for graduation. Students who have otherwise satisfied the mathematics proficiency requirement may not register for this course. Overqualified students as determined by a placement test may be deregistered and directed to transfer to another course. May not count toward graduation.

Fall and spring, 3 credits

MAP 102 College Algebra

Intended for students whose preparation in basic mathematics is inadequate for their chosen programs of study. Signed numbers; polynomial manipulation; linear, quadratic, and fractional equations in one variable; graphing; radicals; and right triangle trigonometry. May not be counted toward the College requirement in natural science. Students who have otherwise satisfied the mathematics proficiency requirement may not register for this course. Overqualified students as determined by a placement test may be deregistered and directed to transfer to another course.

Fall and spring, 3 credits

MAP 106 Proficiency Mathematics

Intended for students who have just missed passing the SUSB mathematics proficiency examination. Beginning after examination results are posted, it offers an eight-week review of the mathematics covered on the test. Students who need an in-depth review should register for either MAP 101 or MAP 102. May not be counted toward the College distribution requirement in the natural sciences. Students who have otherwise satisfied the mathematics proficiency requirement may not take this course. Satisfactory/Unsatisfactory grading only.

Fall and spring, 1 credit

MAT 111 Introductory Mathematics I

A course designed to acquaint the student with the flavor of mathematics, what mathematics is, and what modern mathematicians do, through consideration of specific topics chosen from logic, set theory, computational processes, elementary number theory, and algebraic systems. MAT 111 and MAT 112 are intended primarily for those who do not plan to take more advanced courses in mathematics and may be taken in any order. May not be taken for credit after credit has been earned for any MAT course numbered higher than 300. Does not satisfy the mathematics proficiency requirement.

Fall, 3 credits

MAT 112 Introductory Mathematics II

A course designed to acquaint the student with the flavor of mathematics, what mathematics is, and what modern mathematicians do, through consideration of specific topics chosen from the limit concept (area, length, rates of change), combinatorial topology, and geometric structures. MAT 111 and MAT 112 may be taken in any order, but may not be taken for credit after credit has been earned for any MAT course numbered higher than 300. Does not satisfy the mathematics proficiency requirement.

Spring, 3 credits

MAT 120 Elementary Functions

Trigonometric functions, exponential and logarithmic functions, basic analytic geometry, graphing, composition, and inverse functions. May not be taken after any college calculus course has been passed with a grade of C or higher.

Fall and spring, 3 credits

MAT 125 Calculus A

Differentiation and integration of elementary algebraic and trigonometric functions, with emphasis on computations and applications. May not be taken for credit in addition to MAT 131 or 141.

Prerequisite: Passing the Mathematics Placement Examination at the appropriate level, or C or higher in MAT 120

Fall and spring, 3 credits

MAT 126 Calculus B

Integrals as area, volume, and curve length. Differentiation and integration of logarithmic and exponential functions. Techniques of integration. Polar coordinates. Parameterized curves. May not be taken for credit in addition to MAT 132 or 142.

Prerequisite: C or higher in MAT 125

Fall and spring, 3 credits

MAT 127 Calculus C

Infinite series and Taylor series. Derivatives of vector-valued functions: tangents and normals to curves. Vector algebra in two and

three dimensions. Functions of several variables: partial derivatives, directional derivatives, the gradient; multiple integrals as volume. May not be taken for credit in addition to MAT 132 or 142.

Prerequisite: MAT 126

Fall, 3 credits

MAT 131 Calculus I

Differentiation and integration of elementary algebraic and trigonometric functions, with emphasis on computations and applications. Integrals as area, volume, and curve length. Differentiation and integration of logarithmic and exponential functions. May not be taken for credit in addition to MAT 125 or 141.

Prerequisite: Passing the Mathematics Placement Examination at the appropriate level, or C or higher in MAT 120

Fall and spring, 4 credits

MAT 132 Calculus II

Techniques of integration. Infinite series, Taylor series. Polar coordinates. Parameterized curves. Derivatives of vector-valued functions: tangents and normals to curves. Vector algebra in two and three dimensions. Functions of several variables: partial derivatives, directional derivatives, the gradient; multiple integrals as volume. May not be taken for credit in addition to MAT 126, 127, or 142.

Prerequisite: C or higher in MAT 131 or 141

Fall and spring, 4 credits

MAT 141 Calculus Alpha

The topics of MAT 131 treated with additional attention to the underlying theory as a means of understanding why the processes of calculus work. May not be taken for credit in addition to MAT 125 or 131.

Fall, 4 credits

MAT 142 Calculus Beta

A continuation of MAT 141 in the same spirit, covering the topics of MAT 132. May not be taken for credit in addition to MAT 126, 127, or 132.

Prerequisite: MAT 141

Spring, 4 credits

MAT 220 Elements of Linear Algebra

An introduction to linear algebra: designed for transfer students who have studied differential equations but have not studied linear algebra. May not be taken for credit simultaneously with, or after credit is received for, MAT 221 or 231 or 241.

Prerequisites: A course in differential equations; permission of the Mathematics Department

Fall, 1 credit

MAT 221 Calculus III: Differential Equations

Techniques for the solution of elementary ordinary differential equations and some elements of linear algebra. Recommended for engineering students. May not be taken for credit in addition to MAT 231 or 241.

Prerequisite: MAT 127 or 132 or 142

Fall and spring, 3 credits

MAT 231 Calculus III: Linear Algebra

An introduction to linear algebra with applications to linear differential equations. Systems of linear equations, vector spaces, bases, linear transformations, and matrices. May not be taken for credit in addition to MAT 221 or 241.

Prerequisite: MAT 127 or 132 or 142

Fall and spring, 3 credits

MAT 241 Calculus Gamma: Linear Algebra

The topics of MAT 231 treated with additional attention to proofs of theorems comprising the underlying theory. May not be taken for credit in addition to MAT 221 or 231.

Prerequisite: MAT 142 or 132 or 127

Fall, 3 credits

MAT 251 Introduction to Mathematical Problem Solving by Computer

An introduction for mathematics majors to computer-assisted mathematical problem solving. Number representations and errors, numerical integration, algorithms for finding zeros of functions and for solving systems of linear equations, interpolation and approximation, data handling, simulation, graphics. The algorithms will be implemented in a high-level programming language (BASIC + 2).

Pre- or corequisite: MAT 231 or 241

Fall and spring, 3 credits

MAT 300 History of Mathematics

A study of the development of mathematics from the Greeks through the development of calculus. Special attention will be devoted to the origins of calculus and to the contributions of 19th-century mathematicians who put it on a firm foundation.

Prerequisite: MAT 127 or 132 or 142

Alternate years, 3 credits (not offered in 1985-86)

MAT 306 Calculus IV: Multivariate Calculus

Differential and integral calculus in 2- and 3-space: directional derivatives, differential, Jacobian matrix, chain rule, multiple integrals, line and surface integrals, applications.

Prerequisite: MAT 221 or 231 or 241

Fall and spring, 3 credits

MAT 307 Calculus Delta: Multivariate Calculus

The topics of MAT 306 treated from a more theoretical point of view. Students completing

this course will be exceptionally well prepared for advanced work in mathematics and for the mathematical aspects of advanced courses in theoretical physics. May not be taken for credit in addition to MAT 306.

Prerequisite: MAT 241
Spring, 3 credits

MAT 310 Linear Algebra

Finite dimensional vector spaces, linear maps, dual spaces, bilinear functions, inner products. Additional topics such as canonical forms, multilinear algebra, numerical linear algebra.

Prerequisite: MAT 221 or 231 or 241
Fall and spring, 3 credits

MAT 311 Number Theory

Congruences, quadratic residues, quadratic forms, continued fractions, Diophantine equations, number-theoretical functions, and properties of the prime numbers.

Prerequisite: MAT 221 or 231 or 241
Fall, 3 credits

MAT 312 Applied Algebra

Topics in algebra relating to computer science: sets and relations, groups, modular arithmetic, partial orderings, Boolean algebra, error-correcting codes, machine computation, finite-state machines. Crosslisted with AMS 302.

Prerequisite: MAT 221 or 231 or 241 or AMS 210
Fall and spring, 3 credits

MAT 313 Abstract Algebra

Groups and rings together with their homomorphisms and quotient structures. Unique factorization, polynomials, and fields.

Prerequisite: MAT 221 or 231 or 241
Fall and spring, 3 credits

MAT 314 Rings and Modules

Structure theory of rings and modules. Applications to canonical forms for matrices and to the structure of finitely generated Abelian groups. Additional topics such as the structure theory of groups and fields, homological algebra.

Prerequisite: MAT 313
Spring, 3 credits

MAT 315 Polynomials and Number Fields

The application of properties of groups, fields, and vector spaces to specific problems involving polynomials and algebraic numbers; e.g., Euclidean constructability and the solution of cubic equations.

Prerequisite: MAT 313
Fall, 3 credits

MAT 320 Introduction to Analysis

A careful study of the theory underlying calculus. The real number system. Basic properties of functions of one real variable. Differentiation, integration, and the inverse theorem. Infinite sequences of functions and uniform convergence. Infinite series.

Prerequisite: MAT 221 or 231 or 241; or B or higher in MAT 127 or 132 or 142
Fall and spring, 3 credits

MAT 322 Analysis in Several Dimensions

Continuity, differentiation, and integration in Euclidean n -space. Differentiable maps. Implicit and inverse function theorems. Differential forms and the general Stokes's theorem.

Prerequisite: MAT 306 and 320, or MAT 307
Fall, 3 credits

MAT 324 Introduction to Functional Analysis (formerly MAT 321)

The topology of metric spaces: compactness, connectedness, completeness, and continuity. Normed vector spaces. Function spaces. Contraction mappings. Applications to differential equations.

Prerequisites: MAT 231 or 241 or 310; either MAT 320 or 307
Spring, 3 credits

MAT 331 Computer-Assisted Mathematical Problem Solving I

Utilization of the computer as a tool to gain insight into complex mathematical problems. Numerical integration, computation of special numbers (π , e , $\Gamma(1/3)$, etc.), interpolation and extrapolation, splines and least squares, nonlinear equations and systems, maxima and minima. Graphics: plotting of surfaces, level sets, orbits of dynamical systems.

Prerequisite: MAT 221 or 231 or 241
Fall, 3 credits

MAT 332 Computer-Assisted Mathematical Problem Solving II

Continuation of MAT 331. Topics selected from stability and error analysis for differential systems, numerical study of special functions, two-point boundary problems, random walks and Monte Carlo methods, extremal problems, numerical Fourier methods, wave propagation phenomena, energy levels, shock waves, interactions, turbulence, strange attractors, and models of chaos.

Prerequisite: MAT 331
Spring, 3 credits

MAT 335 Introduction to Complex Analysis

Holomorphic functions, Cauchy-Riemann equations, Cauchy theory, maximum modulus principle, Taylor series expansions, differential forms, meromorphic functions, Laurent series expansions, and evaluation of

integrals by the method of residues. Topics are chosen from harmonic functions, Dirichlet problem for the disc, and Hilbert transforms.

Prerequisite: MAT 320
Fall, 3 credits

MAT 341 Advanced Calculus: Differential Equations

Ordinary differential equations; integration by power series; Bessel and Legendre functions; expansion in series of orthogonal functions, including Fourier series; introduction to partial differential equations of mathematical physics; Laplace's equation; calculus of variations.

Prerequisite: MAT 306 or 307
Fall and spring, 3 credits

MAT 342 Advanced Calculus: Complex Functions

Functions of a complex variable, calculus of residues including evaluation of real integrals, power and Laurent series, conformal mappings and applications, Laplace and Cauchy-Riemann equations, the Dirichlet and Neumann problems, and the Laplace and Hilbert transforms and their applications to ordinary and partial differential equations.

Prerequisite: MAT 306 or 307
Spring, 3 credits

MAT 350 Differential Equations and Dynamical Systems

Qualitative study of first-order systems of ordinary differential equations: vector fields and flows, existence and uniqueness theorems, stability, asymptotic behavior, autonomous systems.

Prerequisite: MAT 221 or 231 or 241
Spring, 3 credits

MAT 353 Partial Differential Equations

Boundary value problems for partial differential equations from the point of view of modern mathematics, especially the wave, heat, and potential equations. Existence, uniqueness, and regularity of solutions. The functional analysis needed will be developed in the course and is not assumed.

Prerequisite: MAT 320 or 341
Fall or spring, 3 credits

MAT 360 Geometric Structures

Formal geometries and models. Topics selected from projective, affine, Euclidean, and non-Euclidean geometries.

Prerequisite: MAT 313
Spring, 3 credits

MAT 361 Differential Geometry of Curves

Differential geometry of curves in the plane and in n -space; winding number, Jordan curve theorem, Borsuk-Ulam theorem, 4-vertex theorem, isoperimetric inequality, curvature of a knot.

Prerequisite: MAT 306 or 307 or AMS 362
Fall, 3 credits

MAT 362 Differential Geometry of Surfaces

The local and global geometry of surfaces: geodesics, parallel transport, curvature, isometries, the Gauss map, the Gauss-Bonnet theorem.

Prerequisite: MAT 306 or 307 or AMS 362
Spring, 3 credits

MAT 365 Introduction to Topology

The properties and characterization of, topological spaces. Continuous maps, homeomorphisms, and their invariants. Fundamental group and covering spaces.

Prerequisites: MAT 306 or 307, and 313
Fall, 3 credits

MAT 371 Logic

A survey of the logical foundations of mathematics: development of propositional calculus and quantification theory; the notions of a proof and of a model; the completeness theorem.

Corequisite: MAT 313
Fall, 3 credits

MAT 373 Analysis of Algorithms

Mathematical analysis of a variety of computer algorithms, including searching, sorting, matrix multiplication, fast Fourier transform, and graph algorithms. Time and space complexity. Upper bound, lower bound, and average case analysis. Introduction to NP completeness. Some machine computation will be required for the implementation and comparison of algorithms. Crosslisted with AMS 373 and CSE 373.

Prerequisites: MAT 221 or 231 or 241 or AMS 210; CSE 114; permission of the Mathematics Department
Spring, 3 credits

MAT 475 Undergraduate Teaching Practicum in Mathematics

Each student will assist in teaching a lower-division mathematics course or will work in the Mathematics Learning Center. The student's work will be regularly supervised by a faculty member. In addition, a weekly seminar will be conducted. Responsibilities may include preparation of materials for student use and discussions, helping students with problems, and involvement in 'alternative' teaching projects. Intended for upper-division students who have excelled in the calculus sequence. Not for major credit. Satisfactory/Unsatisfactory grading only.

Prerequisite: Permission of the Director of the Undergraduate Program
Fall and spring, 3 credits

MAT 487 Independent Study in Special Topics

A reading course for juniors and seniors. The topics may be chosen by the student with the approval of a supervising member of the faculty who will also take responsibility for evaluation. A topic that is covered in a course regularly offered by the department is not appropriate for independent study. May be repeated.

Prerequisite: Permission of the Director of the Undergraduate Program
Fall and spring, 3 credits

MAT 491 Senior Seminar

This course is designed for seniors who are majoring in mathematics and who have a serious interest in mathematical research. Each term a topic will be selected comprising material not presented in undergraduate courses. By the end of the term students will be acquainted with a limited area of current research interest. The material will be presented in seminar style with students giving the lectures. May be repeated.

Prerequisite: Permission of department
Fall or spring, 3 credits

Graduate Courses

Junior and senior mathematics students of above-average ability are encouraged to take appropriate graduate courses in mathematics. Permission of the instructor is a prerequisite for registering in a graduate course. See *Graduate Bulletin* for details. The graduate courses open to qualified undergraduates are:

MAT 530 Topology/Geometry I
MAT 531 Topology/Geometry II
MAT 534 Algebra I
MAT 535 Algebra II
MAT 539 Algebraic Topology
MAT 542 Complex Analysis I
MAT 543 Complex Analysis II
MAT 544 Analysis
MAT 546 Differential Equations
MAT 550 Real Analysis I
MAT 551 Real Analysis II
MAT 566 Differential Topology
MAT 568, 569 Differential Geometry

Mathematics Secondary Teacher Preparation Program

This program prepares students for a career as a teacher of mathematics in the secondary schools. Students may enroll in either a four- or a five-year

program. The four-year program leads to a Bachelor of Science degree in either mathematics or applied mathematics and statistics and to New York State provisional certification for teaching mathematics, grades 7-12. The five-year program leads to Bachelor of Science and Master of Arts degrees in mathematics and to New York State permanent certification for teaching mathematics, grades 7-12.

Students wishing to enroll in the program should register with the Mathematics Department's Director of Teacher Preparation by the end of the freshman year, if possible, and at the latest before registering for the junior

year. Students interested in the five-year program should also register with the Mathematics Department's Associate Director of the Graduate Program by the beginning of the junior year and, in the senior year, apply for admission to the Graduate School. The fifth year of the program may be taken part-time in the evening and summers, spread over a period of two years. Full-time students will be eligible to apply for teaching assistantships for the fifth year.

Requirements for the Four-Year Program

1. Completion of either the MAT (mathematics) or the AMS (applied mathematics and statistics) major.
2. Credit for, or exemption from, the following courses:
MAT 313, 320, 360
AMS 310
MAE 301, 302, 311, 312, 450, 454
SSI 265, 350
3. Nine credits in courses chosen from:
MAT 310, 311, 315, 331, 342 (or 335), 350, 361, 371, 373
AMS 301, 311, 326, 331, 341, 342, 373
CSE 201, 373

The program includes three semesters of practical work in the teaching of mathematics. In the fall of the junior year, students will observe classes in local secondary schools (MAE 311). In the spring, students will engage in a supervised program of limited classroom participation (MAE 312). In one semester of the senior year, students will carry out supervised student teaching (MAE 450) and participate in an associated student teaching seminar (MAE 454).

Students in the program are strongly encouraged to include AMS 301 and MAT 315 among their electives and to take a one-year sequence that uses mathematics in physics, chemistry, biology, engineering science, or economics. Other courses that are useful are the history of mathematics course, MAT 300, and the logic course, PHI 220.

Sample Program (required courses only)

Freshman: MAT 131, 132 (or 141, 142 or 125, 126, 127)

Sophomore: MAT 231 (or 241) and AMS 310 (Fall); MAT 306 (or 307) and MAT 313 (Spring)

Junior: MAE 301 and 311, MAT 320 (Fall); MAE 302 and 312, MAT 360 (Spring); SSI 365 and 350

Mathematics electives required for MAT or AMS major

Senior: MAE 450 and 454

Mathematics electives required for MAT or AMS major

Requirements for the Five-Year Program

1. Completion of the requirements of the four-year program, with a major in mathematics (MAT). AMS 310 may be replaced in these requirements by MAT 516 or by any graduate course in statistics.
2. Admission to the Graduate School, normally during, or at the end of, the fourth year of the program.
3. AMS 301 and either MAT 315 or 512.
4. Thirty (30) graduate credits in courses approved by the Department of Mathematics, which will ordinarily include MAT 511, 513, 514, 515, 518, 519, and a graduate course in computer science. At least 24 of these credits must be taken while matriculated as a graduate student.
5. Passing the comprehensive examination, which will consist of the final examinations in four of the courses in the program, ordinarily MAT 513, 514, 515, and either 512 or 516.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

The following courses are for students registered in the secondary teacher preparation program in mathematics and are open to others only by permission of the Mathematics Department's Director of Teacher Preparation.

MAE 301 Foundations of Secondary School Mathematics

A reexamination of elements of school mathematics, including topics in algebra, geometry, and elementary functions. Competence in basic secondary level ideas

and techniques will be tested. Oral and written presentations will be required.
Prerequisite: MAT 221 or 231 or 241
Corequisite: MAE 311 and MAT 313
Fall, 3 credits

MAE 302 Methods of Teaching Secondary School Mathematics

An introduction to the dynamics of the classroom for the student preparing to teach secondary school mathematics. Various aspects of teaching are considered: goals of mathematics education, learning theories, mathematics curricula, lesson planning, evaluation, teaching strategies. Reports are required on observations made in the schools. Lesson plans are drawn up and presented to the group.
Prerequisite: MAE 301
Pre- or corequisite: MAT 320
Spring, 3 credits

MAE 311 Classroom Observations

Individual weekly visits to local secondary schools to observe mathematics classes. All types and levels (7-12) of mathematics teaching will be included. Debriefing and analysis will follow each visit.
Prerequisite: MAT 221 or 231 or 241
Corequisites: MAE 301; MAT 313
Fall, 3 credits

MAE 312 Micro-Teaching

Twice-weekly supervised classroom experience, tutoring, or working with small groups of students as a teacher's aide.
Prerequisite: MAE 311
Corequisite: MAE 302
Spring, 2 credits

MAE 450 Student Teaching

Intensive supervised teaching in a secondary school. Students will work in the school under the supervision of an experienced teacher. Satisfactory/Unsatisfactory grading only.
Prerequisites: MAE 312; permission of Mathematics Director of Teacher Preparation
Corequisite: MAE 454
Fall and spring, 12 credits

MAE 454 Student Teaching Seminar

Weekly discussions of teaching techniques and experiences, learning theory, curriculum content, and classroom problems.
Prerequisites: MAE 312; permission of Mathematics Director of Teacher Preparation
Corequisite: MAE 450
Fall and spring, 3 credits

Media Arts

The media arts minor (MDA) provides a student with an opportunity to examine the entire field of media technology, acquiring thereby a general overview of theory and practice. The minor should prepare a student for specialized studies in any one of the media. Media skills will broaden career options for students majoring in any of the natural sciences, social sciences, or humanities. The media arts minor is also for students who simply want to develop critical standards in order to live intelligently in this media-saturated world.

Requirements for the Minor

	Credits
THR 117 Film, and Video Narrative	3
THR 217 Introduction to Filmmaking	3
THR 270 Basic Audio Production	3
THR 272 Introduction to Television	3
THR 325 Writing for the Media	3
THR 377 The Media Industry	3
THR 403 Media Theory and Criticism	3
THR 362 Advanced Acting: Film and Video <i>or</i> THR 371 Techniques of Film Production <i>or</i> THR 375 Television Studio Production	3
Total	24

Note: All courses for the minor must be taken for a letter grade. No grade lower than C may be applied to the minor. At least 12 of the 24 credits must be taken at Stony Brook.

No more than six credits required for the media arts minor may be counted toward the theatre arts major. For course descriptions, see alphabetical listing, Theatre Arts.

Middle Eastern Studies

Minor Coordinator

Elizabeth C. Stone: Anthropology

The interdisciplinary minor in Middle Eastern Studies (MES) allows students interested in the Middle East to design an individual program of study centered around a particular area of concentration in consultation with an advisor.

Requirements for the Minor in Middle Eastern Studies

	Credits
A. SOC 264 Introduction to Middle Eastern Studies	3
B. 15 credits chosen from courses on the Middle East, of which at least 9 credits must be upper division.	

Courses to be distributed as follows:

1. 12 credits in courses on student's approved topic	12
2. 3 credits in a related course from another minor topic area in Middle Eastern studies	3
Total	18

Notes: All courses must be taken for a letter grade. Failure to obtain prior approval of the program may result in lack of credit for the minor.

Besides the required courses, it is strongly recommended that students take a year of language related to their minor topic.

Sample Programs

The following programs are suggested as examples only. Consult an advisor for other possibilities, such as Islamic studies, Middle Eastern history, or Semitic languages and linguistics. The courses indicated in parentheses are recommended language courses but are not required.

Hebrew Civilization

SOC 264 Introduction to Middle Eastern Society
JDS 225, 226 Civilization of Israel

JDH 320 The Rabbinic Tradition
HIS 356 Zionism, 1848-1948
ANT 318 Peoples of the Middle East (HBW 111, 112 Elementary Hebrew)

Ancient Near East

SOC 264 Introduction to Middle Eastern Society
HIS 230 The Ancient Near East
ARH 207 The Art of the Ancient Near East
ANT 318 Peoples of the Middle East
ANT 358 Ways to Civilization
ANT 360 Ancient Mesopotamia (LAN 111, 112 Elementary Arabic or HBW 111, 112 Elementary Hebrew)

Middle Eastern Culture and Politics

SOC 264 Introduction to Middle Eastern Society
POL 210 Foreign Relations in the Middle East
POL 308 Politics of Conflict
ANT 318 Peoples of the Middle East
RLS 380 Islamic Classics (LAN 111, 112 Elementary Arabic or HBW 111, 112 Elementary Hebrew)

Department of Music

Professors

Bulent Arel, Director of Electronic Music Studio, Diploma, State Conservatory of Ankara: Composition; theory.

Samuel Baron, B.S., Juilliard School of Music; pupil of George Barrere and Arthur Lora: Flute; chamber music.

Lazar Gosman, Diploma, Moscow State Conservatory; pupil of David Oistrakh: Violin; chamber music.

Bernard Greenhouse, Emeritus, Diploma, Juilliard Graduate School: Cello; chamber music.

Gilbert Kalish, B.A., Columbia University: Piano; chamber music.

Billy Jim Layton, Chairperson, Ph.D., Harvard University: Composition; theory.

John Lessard, Diploma, Ecole Normale; Diploma, Longy School of Music: Composition; theory.

Charles Rosen, Ph.D., Princeton University: History; interdisciplinary studies in music, literature, art, and philosophy.

Leo Treitler, Ph.D., Princeton University: Medieval, Renaissance, and 20-century history.

Associate Professors

E. Antony Bonvalot, Ph.D., Harvard University: Renaissance history.

Marguerite Brooks, Director of Choral Organizations, M.Mus., Temple University: Choral conducting.

Sarah Fuller, Ph.D., University of California, Berkeley: Medieval and Renaissance history. Recipient of the President's Award for Excellence in Teaching, 1983-84

Richard Kramer, Ph.D., Princeton University: 18th-century history; Beethoven.

David Lawton, Director of the University Orchestra, Ph.D., University of California, Berkeley: Orchestral and opera conducting; 19th-century history.

Daria Semegen, M.Mus., Yale University: Composition; theory; electronic music.

Peter Winkler, Director of Undergraduate Studies, M.F.A., Princeton University: Composition; theory; popular music. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1976-77

Assistant Professors

Michael Cherlin, Ph.D., Yale University: Theory.

Eva Linfield, Ph.D., Brandeis University: 17th-century history; performance of early music.

Sheila Silver, Ph.D., Brandeis University: Composition; theory.

Performing Artists in Residence

Adele Addison, B.Mus., Westminster Choir College; New England Conservatory of Music: Voice; vocal repertory.

Ronald Anderson, M.S., Juilliard School of Music; Ed.D., Columbia University: Trumpet, chamber music.

Ronald Boror, D.M.A., Yale University: Trombone; chamber music.

Martin Canin, M.S., Juilliard School of Music: Piano; chamber music.

Raymond Des Roches, M.Mus., Manhattan School of Music: Percussion; chamber music.

Timothy Eddy, M.Mus., Manhattan School of Music: Cello; chamber music.

Gary Glaze, M.Mus., University of Michigan, Ann Arbor: Voice; opera workshop.

David Glazer, B.Ed., University of Wisconsin at Milwaukee: Clarinet; chamber music.

John Graham, B.A., University of California, Berkeley: Viola; chamber music.

Simon Karasick, Emeritus, B.Mus., Eastman School of Music: Trombone.

Jack Kreiselman, Director of the University Wind Ensemble, Manhattan School of Music; pupil of Simeon Bellison and Simon Kovar: Clarinet; chamber music.

Julius Levine, Coordinator of Chamber Music, B.S., Juilliard School of Music: String bass; chamber music.

William Purvis, M.Mus., Hunter College: Horn; chamber music.

Ronald Roseman, B.S., Queens College: Oboe; chamber music.

Arthur Weisberg, Conductor of the University Chamber Orchestra, Juilliard School of Music; pupil of Simon Kovar: Bassoon; orchestral conducting.

Jerry Willard, Cleveland Institute of Music; study with John Williams and Misha Mishakoff: Guitar; chamber music.

Teaching Assistants

Estimated number: 58

The undergraduate major in music is designed as a balanced educational program that serves as preparation for professional careers and advanced training in performance, composition, scholarship, and teaching.

Requirements for the Major in Music

A. Admittance to the Major
Any student wishing to major in music must pass an audition in voice or instrument and a theory placement examination that tests aural skills and musical literacy (that is, the ability to read music and to hear the sound of a score from the written page alone). Students should consult the department office for dates of the theory placement examination and to make an appointment for an audition.

B. Study within the Area of the Major		Credits
1. Theory		
MUS 221 Musicianship II	3	
MUS 222 Modal Counterpoint I	3	
MUS 321, 322 Tonal Harmony I, II	6	
MUS 421 Analysis of Tonal Music	3	
MUS 422 Analysis of 20th-Century Works	3	
2. History and Literature		
MUS 241 Western Music before 1600	3	
MUS 341 Western Music from 1600 to the Early 19th Century	3	
MUS 342 Western Music of the 19th and 20th Centuries	3	
Three additional history courses numbered 441 to 478 to be chosen in consultation with the student's advisor. The courses should be distributed among a range of historical periods.		

MUS 431, 432, or 434 may be substituted for one of the three required electives in the sequence 441-478

3. Performance	9
At least one course from the groups MUS 161-187 Performance Study or MUS 361-387 Advanced Performance Study for a minimum of four semesters.	8-16
MUS 261 University Chorus or MUS 262 University Orchestra or MUS 263 University Wind Ensemble or MUS 393 Chamber Chorus for four semesters. (MUS 390 Collegium Musicum may count for two semesters of this requirement.)	4-8
Total	48-60

Note: No more than 30 credits of individual instruction in instrument or voice may be included in the 120 credits required for the B.A. degree.

C. Piano Proficiency
Each student will be expected to pass a piano proficiency test at the end of the first year as a music major.

D. Foreign Language
Students who intend to continue their studies beyond the B.A. degree are advised that most graduate music programs require a reading knowledge of French or German, often both. (Language courses may be taken under the P/NC option.)

Note: All courses used to fulfill the requirements for the major in music must be taken for a letter grade.

Honors Program in Music

Candidates for honors in music must be nominated by a faculty member who will agree to act as sponsor for the honors project. An eligible student may submit a proposal for a project to the proposed sponsor, who will forward the proposal together with a letter of nomination to the Music Department's Undergraduate Studies Committee. To be eligible, a student must have

maintained at least a 3.0 grade point average overall, and a 3.0 average in music. After entering the honors program, a student must maintain at least a 3.5 average in music.

The project may be in the area of performance, composition, history, or theory, carried out under the supervision of the sponsor. The completed project will be reviewed by an evaluating committee consisting of the sponsor, another member of the music faculty, and an outside evaluator. Complete guidelines for the honors program are available in the department office.

Minor in Music

The music minor is designed to provide students with an interest in music with a foundation in the theory and history of music and experience in a performing ensemble. Less rigorous than the music major, the minor is not intended to prepare students for advanced study or professional work in music.

	Credits
1. Theory	
MUS 119 Elements of Music	3
MUS 315, 316 Structural Principles of Music	6
2. History	
Three courses chosen from the series MUS 301-309	9
3. Performance	
Two semesters of one or more of the following:	
MUS 261 University Chorus	
MUS 262 University Orchestra	
MUS 263 University Wind Ensemble	
MUS 390 Collegium Musicum	
MUS 393 Chamber Chorus	2-4
Total:	20-22

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Courses for Students Majoring in Other Fields

MUS 101 Introduction to Music

The factors that create form and coherence in music will be studied from the listener's point of view. Concepts such as melody, harmony, counterpoint, and rhythm will be

illustrated by examples representing diverse historical periods and musical styles. No previous musical training is assumed.
Fall and spring, 3 credits

MUS 107 History of Jazz

A survey of jazz from its Afro-American roots in the late 19th century to the present. Emphasis will be on musical characteristics—styles, forms, types of ensemble, important performers—with some attention to the cultural and social position of jazz in this country and its interaction with other musics.
Fall, alternate years, 3 credits (not offered in 1985-86)

MUS 109 Rock Music

A study of the development of rock from the end of World War II to the present. Emphasis will be upon the music and its connection with earlier folk and popular styles, with special attention to various syntheses of African and European traditions.
Fall, alternate years, 3 credits (not offered in 1986-87)

MUS 119 The Elements of Music

The notation of intervals, scales, chords, rhythms, and meters; practical exercises and ear training.
Fall and spring, 3 credits

MUS 261 University Chorus

Study and performance of a repertory from the Middle Ages to the present. More than four unexcused absences from rehearsals eliminates credit. May be repeated. Satisfactory/Unsatisfactory grading only.
Prerequisite: Audition
Fall and spring, 1 credit

MUS 262 University Orchestra

Study and performance of works from the repertory of the concert orchestra. More than four unexcused absences from rehearsals eliminates credit. May be repeated. Satisfactory/Unsatisfactory grading only.
Prerequisite: Audition
Fall and spring, 2 credits

MUS 263 University Wind Ensemble

Study and performance of works for ensembles of woodwinds, brass, and percussion in various combinations. More than four unexcused absences from rehearsals eliminates credit. May be repeated. Satisfactory/Unsatisfactory grading only.
Prerequisite: Audition
Fall and spring, 2 credits

Note: One course from the group MUS 301-309 will be offered every semester. Consult the Class Schedule for current offerings.

MUS 301 Music of the Baroque

The development during the late Renaissance of a new style will be traced in Italy and elsewhere, through opera and oratorio, cantata and chorale, concerto, suite, and trio sonata, to its ultimate expression in the works of Handel, Bach, and their contemporaries.

Prerequisite: MUS 101 or 119
3 credits

MUS 302 The Music of J.S. Bach

The vocal and instrumental works of Johann Sebastian Bach and the cultural and musical traditions in which they were grounded.

Prerequisite: MUS 101 or 119
3 credits

MUS 303 The Music of Beethoven

An exploration of the meaning and continuing relevance of one of the pivotal composers of the western world by the study of his symphonies, string quartets, piano sonatas, and other works.

Prerequisite: MUS 101 or 119
3 credits

MUS 304 Piano Music Since Mozart

A historical survey of piano music, emphasizing the solo repertory, from the late 18th century to the present day.

Prerequisite: MUS 101 or 119
3 credits

MUS 305 Music in the Romantic Era

The expressive art of the century between the birth of Schubert and the death of Brahms is examined in selected works of these and other figures, such as Berlioz, Mendelssohn, Chopin, Schumann, Liszt, Wagner, and Verdi.

Prerequisite: MUS 101 or 119
3 credits

MUS 306 The Symphony

Study of important symphonic works from the 18th century to the present. The course will concentrate on the development of styles from Haydn, Mozart, and Beethoven through the romantics, Brahms, and Mahler, concluding with the transformation of the symphonic idea in works of Stravinsky and Webern.

Prerequisite: MUS 101 or 119
3 credits

MUS 307 Music and Drama

The ritual and dramatic uses of music from antiquity to the modern lyric theatre, with emphasis on the operatic repertory from Mozart to Berg.

Prerequisite: MUS 101 or 119
3 credits

MUS 309 Music of the 20th Century

An introduction to the variegated and rapidly changing trends of the present century, including impressionism, expressionism, neoclassicism, twelve-tone and other serialism, constructivism, chance music, electronic and computer music, as well as styles derived from folk music, jazz, and other forms of popular music.

Prerequisite: MUS 101 or 119
3 credits

MUS 315, 316 The Structural Principles of Music I, II

An introduction to the language and basic structural concepts of the art through the study of such elements as melody, rhythm, harmony, counterpoint, and form; analysis, written exercises, and discussion of theoretical principles.

Prerequisite to MUS 315: MUS 119
Prerequisite to MUS 316: MUS 315
Fall (315) and spring (315, 316), 3 credits

MUS 349 The Creative Process in the Fine Arts

An examination of the creative process and its philosophical foundations in Western culture. Students will explore highlights of the philosophical tradition since Plato, attend exhibits, rehearsals, and performances, and discuss with visiting artists their work and its sources. Crosslisted with THR 349 and ARH 349.

Prerequisites: One philosophy course; ARH 101 or 102 or 110 or MUS 101 or 119 or THR 101 or 104
Fall or spring, 3 credits

Courses for Music Majors

MUS 121 Musicianship I

Beginning music theory including notation of rhythms, scales, intervals, chords, sight singing, and simple rhythmic exercises. Elementary melodic, rhythmic, and harmonic dictation. Intended for students who are not prepared to enter MUS 221.

Prerequisite: Placement examination (consult department as early as possible concerning dates)

Pre- or corequisite: MUS 160 or passing piano proficiency examination
Fall and spring, 3 credits

MUS 160 Basic Piano

Instruction in keyboard skills for beginners, intended for music majors who are unable to pass the department's piano proficiency examination. Two students meet forty-five minutes a week with the instructor, with four

hours of individual practice required. May be repeated.

Prerequisite: Permission of instructor
Fall and spring, 1 credit

MUS 161 to 187 Performance Study

MUS 161 Piano
MUS 163 Harpsichord
MUS 165 Violin
MUS 166 Viola
MUS 167 Cello
MUS 168 String Bass
MUS 169 Guitar
MUS 170 Flute
MUS 171 Oboe
MUS 172 Clarinet
MUS 173 Bassoon
MUS 175 Horn
MUS 176 Trumpet
MUS 177 Trombone
MUS 178 Tuba
MUS 180 Percussion
MUS 182 Voice
MUS 187 Other Instruments

A forty-five-minute individual lesson or one-hour group lesson each week, with five hours of practice required. At least half of the semester will be devoted to individual lessons, which may be taught by a graduate teaching assistant or a faculty instructor; group lessons will be given by faculty instructors only. Open to music majors and, enrollment permitting, to other students with a serious interest in music. May be repeated.

Prerequisites: Audition; permission of instructor
Prerequisite to MUS 187: Approval of department Undergraduate Studies Committee

Fall and spring, 2 credits

MUS 221 Musicianship II

Intended to develop the student's aural perception. Problems in melodic, rhythmic, and harmonic dictation; sight singing exercises including complex rhythms, tonal and modal melodies, modulation; elementary analysis of a few basic musical forms.

Prerequisite: MUS 121 (consult department as early as possible concerning date of placement examination)
Pre- or corequisite: MUS 160 or passing piano proficiency examination
Fall and spring, 3 credits

MUS 222 Modal Counterpoint I

Counterpoint in 16th-century style for two voices.

Pre- or corequisite: MUS 221
Fall and spring, 3 credits

MUS 237 Composition in Popular Styles

Individual projects in songwriting, jazz composition, and related work. Students will arrange for performance of their work in a

concert at the end of the semester. Some previous composing experience and an adequate background in theory are required. Enrollment limited to eight. May be repeated once.

Prerequisite: Permission of instructor
Spring, 3 credits

MUS 239 Beginning Composition

Individual projects in composition discussed and criticized in class. Enrollment limited to eight. May be repeated once.

Prerequisite: Permission of instructor
Fall or spring, 3 credits

MUS 241 Western Music before 1600

The history of western music from antiquity to the late 16th century.

Prerequisite: MUS 222
Fall, 3 credits

MUS 261 University Chorus

Study and performance of a repertory from the Middle Ages to the present. More than four unexcused absences from rehearsals eliminates credit. May be repeated.

Satisfactory/Unsatisfactory grading only.

Prerequisite: Audition
Fall and spring, 1 credit

MUS 262 University Orchestra

Study and performance of works from the repertory of the concert orchestra. More than four unexcused absences from rehearsals eliminates credit. May be repeated.

Satisfactory/Unsatisfactory grading only.

Prerequisite: Audition
Fall and spring, 2 credits

MUS 263 University Wind Ensemble

Study and performance of works for ensembles of woodwinds, brass, and percussion in various combinations. More than four unexcused absences from rehearsals eliminates credit. May be repeated. Satisfactory/Unsatisfactory grading only.

Prerequisite: Audition
Fall and spring, 2 credits

MUS 321, 322 Tonal Harmony I, II

Practice in homophonic writing, including the harmonization of chorales.

Prerequisite to MUS 321: MUS 222
Prerequisite to MUS 322: MUS 321
Fall and spring, 3 credits each semester

MUS 331 Musicianship III

Sight singing and dictation (one to four voices) of tonal, modal, and atonal examples with progressively complex rhythms.

Exercises in aural analysis.
Prerequisite: MUS 221
Spring, 3 credits

MUS 341 Western Music from 1600 to the Early 19th Century

A survey of style and form from early opera through the late quartets of Beethoven.

Prerequisites: MUS 241 and 321
Spring, 3 credits

MUS 342 Western Music of the 19th and 20th Centuries

A survey of music from the early 19th century until the present day, with emphasis on major currents of stylistic development.

Prerequisites: MUS 322 and 341
Fall, 3 credits

MUS 361 to 367 Advanced Performance Study

MUS 361 Piano

MUS 365 Violin

MUS 366 Viola

MUS 367 Cello

MUS 368 String Bass

MUS 369 Guitar

MUS 370 Flute

MUS 371 Oboe

MUS 372 Clarinet

MUS 373 Bassoon

MUS 375 Horn

MUS 376 Trumpet

MUS 377 Trombone

MUS 378 Tuba

MUS 380 Percussion

MUS 382 Voice

MUS 387 Other Instruments

A one-hour individual lesson each week, with 15 hours of practice required. Open only to students with adequate preparation who demonstrate a professional commitment to the performance of music. Lessons will be taught either (a) by a member of the music faculty, or (b) by a teaching assistant, or (c) by an approved off-campus teacher.

Progress of students will be monitored by faculty examination. May be repeated.

Prerequisites: Audition; permission of instructor

Prerequisite to MUS 387: Approval of department Undergraduate Studies

Committee

Fall and spring, 4 credits

MUS 390 Collegium Musicum

A workshop in the performance of music scored for small vocal and instrumental ensembles, with emphasis on the repertory from the Middle Ages to 1750. May be repeated but will count toward fulfillment of major requirements only twice.

Prerequisite: MUS 221
Fall and spring, 1 credit

MUS 391 Chamber Music

Ensembles formed by students enrolled in MUS 161 to 187 Performance Study, receiving approval of a faculty instructor and assignment of a repertory, who will rehearse

two hours a week under the supervision of a graduate trainee. May be repeated.

Prerequisite: Permission of instructor
Fall and spring, 1 credit

MUS 393 Chamber Chorus

Performance of works for small chorus. Repertory to be chosen from all periods. May be repeated.

Prerequisites: Audition; permission of instructor

Fall and spring, 2 credits

MUS 394 Instrumental Master Class

Performance and coaching of solo works for a specified instrument under the instruction of a member of the performance faculty. May be repeated for credit.

Prerequisites: Audition; permission of instructor

Corequisite: The appropriate course from MUS 161-180

Fall or spring, 2 credits

MUS 421 Analysis of Tonal Music

An examination, through the study of selected works, of the action and interaction of harmonic progression, rhythm, meter, motive, and line in defining and articulating tonal structures.

Prerequisite: MUS 322
Fall, 3 credits

MUS 422 Analysis of 20th-Century Works

Music to be studied will be selected from representative works by Debussy, Bartok, Schoenberg, Stravinsky, Webern, and others.

Prerequisite: MUS 421
Spring, 3 credits

MUS 431 Modal Counterpoint II

Counterpoint in 16th-century style for three or more voices.

Prerequisite: MUS 222
Alternate years, 3 credits (not offered in 1986-87)

MUS 432 Tonal Counterpoint

A study of the art of combining voices under the conditions of tonal harmony as observed in works from Bach through the romantic composers.

Prerequisite: MUS 322
Alternate years, 3 credits (not offered in 1985-86)

MUS 434 Orchestration

The possibilities and limitations of the commonly used instruments; conventions of notation; and practice in scoring for various ensembles.

Prerequisite: MUS 322
Spring, 3 credits

MUS 439 Composition

Open only to students demonstrating sufficient aptitude and capacity for original work. May be repeated.

Prerequisite: Permission of instructor
Fall and spring, 3 credits

Note: Five history courses from the group MUS 441-478 will be offered every year. Consult the Class Schedule for current offerings.

MUS 441 Secular Music of the Renaissance

A survey of secular vocal music from the songs of Dufay through the airs of Dowland. The 16th-century Italian madrigal and the French chanson will receive particular attention. A central concern will be shifting relationships between music and poetry.

Prerequisite: MUS 241
3 credits

MUS 443 Johann Sebastian Bach

A study of selected vocal and instrumental works.

Prerequisites: MUS 322 and 341
3 credits

MUS 451 Dramatic Music of the Baroque

Opera and oratorio of the 17th and 18th centuries with emphasis on specific works by Monteverdi and Handel. Topics for discussion will include changing operatic conventions and relationships between opera and oratorio in the period.

Prerequisites: MUS 322 and 341
3 credits

MUS 452 Mozart

Mozart as catalyst to the development of the important genres (vocal and instrumental) in late 18th-century Vienna: symphony, keyboard concerto, music for smaller ensemble, and the various species of opera.

Prerequisites: MUS 322 and 341
3 credits

MUS 453 Beethoven

Works of differing scope and medium drawn from every period of Beethoven's life.

Prerequisites: MUS 322 and 341
3 credits

MUS 456 Classical Chamber Music

The string quartets of Haydn, Mozart, and Beethoven provide a central point of reference in the course.

Prerequisites: MUS 322 and 341
3 credits

MUS 458 Orchestral Music of the 19th Century

The development of orchestral music from Beethoven's Ninth Symphony to the symphonies of Gustav Mahler and the tone poems of Richard Strauss. Solutions of composers who continued to work along classical lines—Schubert, Mendelssohn, and Brahms—will be contrasted with those of composers who explored new relations between music and literature—Berlioz, Liszt, Strauss, and others.

Prerequisites: MUS 322 and 342
3 credits

MUS 460 Opera

Study of a specific topic in opera such as the work of a single composer (Mozart, Verdi, Wagner), a national opera tradition (19th-century Italian opera, German opera), a genre (comic opera), or a problem (foundations of opera conventions).

Prerequisite: MUS 322
Pre- or corequisite: MUS 342
3 credits

MUS 462 The Lied from Schubert to Wolf

The exploration of a peak of German tradition in the matching of text and music.

Prerequisites: MUS 322 and 342
3 credits

MUS 464 The Generation of 1830

Chopin, Schumann, Liszt, Mendelssohn, and Berlioz, including their stylistic sources in earlier music and influence on later generations.

Prerequisites: MUS 322 and 342
3 credits

MUS 468 Stravinsky

The changing stylistic manners adopted by a pivotal composer of the 20th century.

Prerequisites: MUS 322 and 342
3 credits

MUS 472 Major 20th-Century Composers

An intensive study of one or more of those composers who have shaped the musical language of our epoch. May be repeated.

Prerequisites: MUS 322 and 342
3 credits

MUS 474 Music Since 1945

A broad survey of contemporary music, stressing the contributions of a large number of composers. The development of an analytical and critical vocabulary appropriate for this music will be a major concern. Problems posed by new media and new methods of notation and the question of historical roots for the new music will also be considered.

Prerequisites: MUS 322 and 342
3 credits

MUS 475 Undergraduate Teaching Practicum

Each student will receive regularly scheduled supervision from the instructor of the course specified as the forum for the practicum. Responsibilities may include conducting recitation sections of lower-division courses, preparing material for practice or discussion, initial correction of homework and tests, and helping students with course problems. Satisfactory/Unsatisfactory grading only.

Prerequisites: Upper-division music major; permission of instructor and department
Fall and spring, 3 credits

MUS 477 American Popular and Folk Styles

The development of the various vernacular musical styles of 20th-century America. Focus will be on the nature of blues, jazz, rhythm-and-blues, popular song, country music, and rock, and on the cross-influences among them.

Prerequisites: MUS 322 and 342
3 credits

MUS 478 History of Electronic Music

A survey of the development of electronic music, and a demonstration of the techniques of sound production and modification in the electronic music studio.

Prerequisites: MUS 322 and 342
3 credits

MUS 487 Independent Project

Individual study under the guidance of a staff member leading to a major essay or composition. May be repeated.

Prerequisites: Permission of instructor; approval of department's Undergraduate Studies Committee
Fall and spring, 1 to 6 credits

MUS 490 Vocal Repertory

Performance and analysis of works from the vocal repertory. May be repeated.

Prerequisite: Permission of instructor
Corequisite: MUS 182 or 382
Fall and spring, 2 credits

MUS 491 Choral Conducting

Manual technique and the analysis and preparation of vocal scores for performance. May be repeated.

Prerequisites: MUS 322; permission of instructor
Fall or spring, 3 credits

Department of Philosophy

Distinguished Professor Emeritus

Justus Buchler, Ph.D., Columbia University:
Metaphysics; moral philosophies.

Professors

Edward S. Casey, Ph.D., Northwestern
University: Philosophy of psychology;
psychoanalysis; phenomenology.

Antonio de Nicolas, Ph.D., Fordham
University: Hermeneutics; Indian philosophy;
psychology; comparative literature.

Sidney Gelber, Ph.D., Columbia University:
Political philosophy.

Patrick Aidan Heelan, Ph.D., University of
Louvain; Ph.D., St. Louis University:
Philosophy of science.

Dick Howard, Ph.D., University of Texas:
Political and social philosophy; Marxism;
continental philosophy; 19th-century
philosophy.

Don Ihde, Ph.D., Boston University:
Phenomenology; philosophy and technology;
perception.

Donald B. Kuspit, Ph.D., University of
Michigan; D.Phil., University of Frankfurt:
Aesthetics.

Robert Neville, Joint with Religious Studies,
Ph.D., Yale University: Philosophy of religion;
process philosophy. Recipient of the State
University Chancellor's Award for Excellence
in Teaching 1974-75

Hugh J. Silverman, Ph.D., Stanford University:
Continental philosophy; literary theory;
philosophy and the arts. Recipient of the
State University Chancellor's Award for
Excellence in Teaching, 1976-77

Marshall Spector, Ph.D., The Johns Hopkins
University: Philosophy of science; philosophy
of technology.

Robert Sternfeld, Ph.D., University of
Chicago: Metaphysics; epistemology;
20th-century philosophy.

Victorino Tejera, Ph.D., Columbia University:
Greek philosophy, aesthetics; philosophy of
history; philosophy of myth.

Harold Zyskind, Ph.D., University of Chicago:
Philosophy of rhetoric; history of philosophy.
Recipient of the President's Award for
Excellence in Teaching, 1983-84

Associate Professors

David B. Allison, Ph.D., Pennsylvania State
University: Phenomenology; existentialism;
Nietzsche.

David A. Dilworth, Ph.D., Fordham University:
Chinese and Japanese philosophy;
philosophy of religion.

Patrick Grim, Ph.D., Boston University:
Philosophy and anthropology; philosophy and
social science.

Patrick J. Hill, Ph.D., Boston University:
Philosophy of communication; philosophy of
community; philosophy of education.

Clyde Lee Miller, Ph.D., Yale University:
Ancient and medieval philosophy;
contemporary moral issues; history of
philosophy. Recipient of the State University
Chancellor's Award for Excellence in
Teaching, 1979-80

Rita D. Nolan, Ph.D., University of
Pennsylvania: Theory of knowledge;
philosophy of language; metaphysics.

Michael Simon, Ph.D., Harvard University:
Philosophy of mind; philosophy of biology
and of the social sciences)

Walter Watson, Ph.D., University of Chicago:
Metaphysics; history of philosophy.

Donn Welton, Chairperson, Ph.D., Southern
Illinois University: Phenomenology;
philosophical anthropology; perception.

Assistant Professors

Eva Feder Kittay, Ph.D., City University of
New York: Philosophy of language;
philosophy and feminism; modern philosophy.

Mary C. Rawlinson, Director of
Undergraduate Studies, Ph.D., Northwestern
University: Continental philosophy;
19th-century philosophy; psychoanalysis;
philosophy of medicine; aesthetics.

Peter Williams, J.D., Ph.D., Harvard
University: Philosophy of law; ethics;
philosophy and medicine. Recipient of the
State University Chancellor's Award for
Excellence in Teaching, 1977-78

Lecturers

Patricia Athay, B.A., Reed College: 17th- and
18th-century philosophy; philosophy of
science; philosophy of social sciences.

Christopher Martin, M.A., University of
Sussex: Philosophy and history of logic;
philosophy of time; logic; medieval
philosophy.

Teaching Assistants

Estimated number: 32

Requirements for the Major in Philosophy

The major in philosophy leads to the
Bachelor of Arts degree. Philosophy
courses are distributed among three
categories. A category number I
through III appears in parentheses after
the title of the course. The following
courses are required:

	<i>Credits</i>
1. PHI 300 and 306	6
2. PHI 391 or 392 or 393	3
3. Two courses in Category I, Styles and Systems of Philosophy in Historical Perspective, exclusive of those required for 1. and 2. above	6
4. Three courses in Category II, Basic Skills and Problem Areas of Philosophy	9
5. Three courses in Category III, Philosophy in Relation to Other Arts and Sciences	9
6. PHI 435 Senior Seminar	3
Total	36

Notes:

1. Courses used to satisfy major requirements must be taken for a letter grade and must be passed with a grade of C or higher.
2. No more than two 100-level philosophy courses may be used to satisfy major requirements.
3. Students who expect to pursue graduate study should include PHI 220 in their programs.

Honors Program in Philosophy

To qualify for the honors program, a student must be a junior or a senior major with an overall average of at least 3.0 and an average in philosophy of 3.5. The student must maintain this average throughout participation in the

honors program. To seek honors, a student must plan a program not later than the first semester of the senior year with a faculty advisor and the Director of Undergraduate Studies. The program shall consist of three courses at the 300 level or higher, concentrated on related aspects of a central problem. At least one of the courses should be independent study under the direction of the advisor and lead to a senior paper. This paper will be reviewed by the advisor and one other member of the philosophy faculty and by a faculty member from outside the department. The senior paper will then be the focus of an oral examination. Honors will be awarded on passage of the examination.

Minor in Philosophy

The minor in philosophy requires 18 credits including at least nine credits in upper-division courses. Emphases from which to choose are: History of Philosophy; Language, Logic, and Science; Social, Moral, and Legal Issues; The Person and the Arts; or Eastern Philosophy. Interested students should consult with the Director of Undergraduate Studies in Philosophy for details about specific courses contributing to each emphasis and for help in planning their schedules. Courses used to satisfy minor requirements must be taken for a letter grade and must be passed with a grade of C or higher.

Study Abroad

Philosophy majors and other interested students who would like to spend a semester or a year studying in France should consult the department's director of undergraduate studies about the philosophy and social sciences program in Paris. With the permission of the department, philosophy majors may also use credits from other study abroad programs to satisfy major requirements.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

For details of staffing, specific content, and reading lists, the student should consult schedules posted by the Philosophy Department before registration each semester.

Lower-Division Courses

These courses offer the student various ways to become acquainted with the nature and variety of philosophical inquiries. There are no prerequisites for any 100-level course.

PHI 100 Concepts of the Person (II)

An introduction to philosophy through readings and discussion on topics such as human identity, human understanding, and human values.

Fall and spring, 3 credits

PHI 103 Philosophic Problems (III)

An introduction to philosophy through the analysis of one or more aspects of contemporary life such as technology, war, international relations, or families and friendships.

Fall and spring, 3 credits

PHI 104 Moral Reasoning (II)

An introduction to philosophy through inquiry into the formation, justification, and evaluation of moral judgments. Students are introduced to the major theories and problems of ethics, such as utilitarianism, Kant's categorical imperative, ethical relativism, egoism, and classical conceptions of the good and virtue. Against this background students engage in discussions of contemporary moral issues such as discrimination, abortion and euthanasia, responsibility in personal relations, war, or the protection and use of the environment.

Fall and spring, 3 credits

PHI 105 Politics and Society (III)

An introduction to philosophy through an analysis of political theories, theories of action, and styles of political life. Main themes will include the relation of the individual to the state, the scope of social responsibility, and the nature of human freedom.

Fall and spring, 3 credits

PHI 108 Logical and Critical Reasoning (II)

The principal aim of this course is to help a student acquire the skills of thinking, reading, and writing critically. The student will develop a sensitivity to language and argumentation that will be applicable to a wide range of situations and subject matters (newspaper editorials, advertisements, books, legal arguments, and puzzles).

Fall and spring, 3 credits

PHI 109 Literature and Human Life (III)

A survey in translation of major authors and works of Western culture, focused around such problems as the self and moral values.

Fall or spring, 3 credits

PHI 110 Literature and Artistic Creation (III)

A survey in translation of major authors and works of Western culture, focused around the artist's perception of the world and his or her creative activity.

Fall or spring, 3 credits

PHI 111 Introduction to Eastern Philosophy: Classical Texts (I)

A study of the main classical texts of Hinduism, Buddhism (Indian, Chinese, Japanese), Taoism, Confucianism, and Neo-Confucianism (2500 B.C. to 300 B.C.). The emphasis will be on the structural and contextual background of these traditions and on relating them to what may be implicit in the American experience.

Fall, 3 credits

PHI 112 Introduction to Eastern Philosophy: Interpretations (I)

Analysis of texts from the Eastern tradition in an effort to recover the different modes of knowledge, language, identification, liberation, etc., and a study of different systems of Eastern philosophy that have dealt with these problems (600 B.C. to present).

Spring, 3 credits

PHI 150 Honors Introduction to Philosophy (I, II, III)

An introduction to philosophy through one of the following approaches: (1) the study of a basic philosophical problem, e.g., the mind-body problem or the limits of human knowledge, or (2) the application of philosophical analysis to some phenomenon of contemporary life, e.g., technology, or (3) the study of philosophy's relation to other disciplines, e.g., science or history. May not be taken for credit in addition to PHI 103.

Prerequisite: Permission of department; priority given to Scholar Incentives students.

Fall or spring, 3 credits

PHI 200 Introduction to Ancient and Medieval Philosophy (I)

Readings and discussion of the major thinkers of the period, e.g., Plato, Aristotle, Plotinus, Augustine, and Aquinas.

Prerequisite: Sophomore standing or one course in philosophy

Fall and spring, 3 credits

PHI 206 Introduction to Modern and Contemporary Philosophy (I)

Readings and discussion of the major thinkers of the period, e.g., Descartes, Hume, Kant, Hegel, Nietzsche, Wittgenstein, and Sartre.

Prerequisite: Sophomore standing or one course in philosophy

Fall and spring, 3 credits

PHI 220 Introduction to Symbolic Logic (II)

This first course in logic emphasizes the development of systematic techniques for assessing the validity of arguments: truth tables and truth values analysis, Venn diagrams, elementary quantification theory, and deduction in both the propositional calculus and quantification theory.

Prerequisite: Sophomore standing or one course in philosophy

Fall and spring, 3 credits

PHI 223 Introduction to Metaphysics (II)

An introduction to philosophy through study of some of the main topics of metaphysics, e.g., mind and matter, appearance and reality, freedom and determinism.

Prerequisite: Sophomore standing or one course in philosophy

Fall or spring, 3 credits

PHI 239 Japanese Philosophy and Aesthetics (I)

This course traces the philosophical process of "modernization" in Japan, focusing on such philosophical and literary authors as Fukuzawa, Natsume, Mori, Watsuji, Nishida and the Kyoto School, and more recent thinkers such as Tanizaki, Kawabata, and Mishima.

Prerequisite: Sophomore standing or one course in philosophy

Fall or spring, 3 credits

PHI 247 Existentialism (I)

Readings in existential philosophy and literature with special emphasis on such themes as alienation, anxiety, nihilism, absurdity, the self, value, death, and immediacy. Existentialist categories will be used to interpret contemporary lifestyles and culture.

Prerequisites: Sophomore standing; one course in philosophy; PHI 100 recommended

Fall and spring, 3 credits

PHI 249 Marxism (I)

A study of Marxism as a philosophical system. Topics include the development of Marxism out of German Idealism, the contributions of Marxism to political and social philosophy, and the influence of Marx on subsequent thinkers, e.g., Althusser, Habermas, Foucault, or Derrida.

Prerequisites: Sophomore standing; one course in philosophy; PHI 105 recommended

Fall and spring, 3 credits

PHI 264 Philosophy and the Arts (III)

A study of the arts focusing on the nature of the creative process, methods of interpretations, essential differences among the various arts, or the relation of performance to text.

Prerequisites: ARH 101 or 102; sophomore standing or one course in philosophy

Fall or spring, 3 credits

PHI 268 Philosophy of Myth and Religion (III)

A philosophical analysis of the principles of religious thought, the role of faith as a foundation for knowledge, the structure and function of myth, and the differences and similarities between myth and religion. May not be taken for credit in addition to the discontinued PHI 273.

Prerequisite: Sophomore standing or one course in philosophy

Fall and spring, 3 credits

PHI 277 Political Philosophy (III)

An inquiry into the function of philosophic principles in political thought and action, with readings drawn from such authors as Plato, Aristotle, Machiavelli, Spinoza, Hobbes, Locke, Kant, Hegel, Mill, and Dewey.

Prerequisite: Sophomore standing or one course in philosophy; PHI 105 recommended

Fall or spring, 3 credits

PHI 285 The Uses of Philosophy (III)

Introductory study of the bearing of philosophic considerations on the special arts and sciences. May be repeated as subject matter differs.

Prerequisite: Sophomore standing or one course in philosophy

Fall or spring, 3 credits

Upper-Division Courses**PHI 300 Ancient Philosophy (I)**

Advanced studies in selected thinkers from Thales to Aristotle.

Prerequisites: Two philosophy courses

Fall and spring, 3 credits

PHI 304 Medieval Philosophy (I)

Study of the writings of major thinkers from Augustine to William of Ockham.

Prerequisite: One philosophy course; PHI 200 or 300 recommended

Fall or spring, 3 credits

PHI 306 Modern Philosophy (I)

Advanced studies in selected thinkers such as Descartes, Vico, Spinoza, Locke, Berkeley, Hume, and Kant.

Prerequisites: Two philosophy courses

Fall and spring, 3 credits

PHI 308 19th-Century Philosophy (I)

Study of major representative figures of the 19th century such as Hegel, Schopenhauer, Marx, Mill, Nietzsche, Kierkegaard, Spencer, and Comte.

Prerequisite: One philosophy course; PHI 206 or 306 recommended

Fall or spring, 3 credits

PHI 310 American Philosophy (I)

A study of selected major figures in the American tradition, e.g., Jefferson, Emerson, Edwards, James, Peirce, Dewey, and Whitehead.

Prerequisite: One course in philosophy; PHI 206 or 306 recommended

Fall or spring, 3 credits

PHI 312 Topics in Contemporary European Thought (I)

Topics in major developments in contemporary European philosophy. Consult departmental brochure as topic changes.

May be repeated for credit with permission of the undergraduate director in philosophy.

Prerequisite: One course in philosophy

Schedule to be announced, 3 credits

PHI 320 Metaphysics (II)

An inquiry into the first principles of all science, art, and action as these are treated in representative classical and modern authors.

Prerequisite: One philosophy course; PHI 206 or 223 recommended

Fall or spring, 3 credits

PHI 323 Philosophy of Perception (II)

An inquiry into the philosophical problems pertaining to the sensing, perceiving, and observing of the world. Various historical solutions (e.g., phenomenism, representationalism, scientific realism, naive realism, etc.) will be examined. Special attention is given to contemporary views and to the impact of recent research (e.g., in the psychological and the biological sciences) on the issue in question.

Prerequisite: One philosophy course or PSY 103; PHI 206 recommended

Fall or spring, 3 credits

PHI 324 20th-Century Philosophies of Experience (I)

A study of leading 20th-century thinkers for whom experience is a primary unifying philosophical theme. Different concepts of experience and the relationships between various approaches such as those of Dewey, Bradley, Husserl, Sartre, Santayana, etc. will be included.

Prerequisite: One philosophy course; PHI 206 or 308 recommended

Fall or spring, 3 credits

PHI 325 Contemporary Philosophies of Language (II)

A discussion of current topics in the philosophy of language.

Prerequisite: One philosophy course; PHI 108 or 220 recommended

Fall or spring, 3 credits

PHI 330 Advanced Symbolic Logic (II)

A study of such topics as a natural deduction system of quantification theory

including consistency and completeness proofs; axiomatic formal systems and associated concepts of consistency, completeness, and decidability; elementary modal logic; and introductory set theory.

Prerequisite: PHI 220

Fall or spring, 3 credits

PHI 332 Theories of Knowledge (II)

A study of a variety of conceptions of the structure of knowledge, the roles of the knower, and the various kinds and status of objects known, as found in classical and contemporary epistemologies.

Prerequisite: One philosophy course or PSY 103; PHI 100 or 206 or 306 recommended

Fall or spring, 3 credits

PHI 340 Indian Buddhism: Its Essence and Development (I)

The relation between the Buddhist model of knowledge (with its historical variations) and its dependence on and variations from the previous Indian cultural idea of knowledge will be examined against the background of Western models of philosophical knowledge in their historical constitution. Materials studied will range from Buddha to Tantra.

Prerequisite: One philosophy course; PHI 111 or 112 recommended

Fall or spring, 3 credits

PHI 342 Chinese and Japanese Buddhism (I)

The main philosophical and institutional stages of Chinese and Japanese Buddhism, with emphasis on the latter. Topics include the transmission of Indian Mahayana Buddhism to China; the formation of such Chinese schools as T'ien-t'ai, Hua-yen, Pure Land, and Ch'an (Zen); the further transmission of such schools to Japan, their assimilation within, and formative influence on, Japanese culture. Japanese schools treated include Teudai, Shingon, Pure Land, Nichiren (Lotus), and Zen.

Prerequisite: One philosophy course

Fall or spring, 3 credits

PHI 353 Philosophy of Mind (II)

Analysis of the major problems in the philosophy of mind, e.g., the mind-body problem, the problem of identity through time, the relation between thoughts and sensations, the problem of the knowledge of other minds.

Prerequisite: One philosophy course; PHI 206 or 223 recommended

Fall or spring, 3 credits

PHI 360 Philosophy of Education (III)

An inquiry into the function of philosophic principles in educational theories and institutions. The inquiry 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.

Prerequisite: One philosophy course or one course related to education; PHI 104 or 105 recommended

Fall and spring, 3 credits

PHI 363 Philosophy of the Social Sciences (III)

A study of the philosophical foundations of the social sciences, focusing on questions concerning the structures of social reality and the methodological and epistemological status of the social sciences.

Prerequisites: One philosophy course; one course in the social sciences

Fall or spring, 3 credits

PHI 364 Philosophy and Technology (III)

A systematic study of how human beings experience the surrounding world of life-space, technological artifacts, and nature. The present impact of technological culture on human beliefs and perceptions of the world will be explored. This course will be interdisciplinary in scope, with readings from philosophy, architecture, technology, anthropology, and literature.

Prerequisite: One philosophy or physics or engineering course; PHI 104 or 105 recommended

Fall or spring, 3 credits

PHI 366 Philosophy of Science: History (III)

A historical study of the reciprocal relationships that have existed between natural science and philosophy in the West from ancient Greece to modern times. An understanding will be sought of the character of scientific and philosophical explanation through the study of various cosmological models of humanity, nature, and God, especially the mechanistic models and the collapse of this model in the first half of the 20th century.

Prerequisites: One philosophy course; one course in natural science or history of science; PHI 206 recommended

Fall or spring, 3 credits

PHI 368 Philosophy of Science: Current Issues (III)

An introductory philosophy of science course dealing with topics selected from contemporary issues. The focus may be on certain methodological issues, such as the nature of scientific explanation and prediction, the structure of theories, the

nature of scientific revolutions, and the role of laws in science; or the course may concern itself with philosophic problems in understanding specific sciences, such as the nature of space and time; or it may focus on the relations of various sciences to one another and to other areas of investigation, such as metaphysics.

Prerequisites: Two philosophy courses; one natural science course; PHI 220 recommended

Fall or spring, 3 credits

PHI 370 Philosophical Psychology (III)

An examination of traditional philosophic theories concerning the nature of a person and their connection to such theories in psychology as psychoanalysis, medical models of mental illness, and theories of behavior modification.

Prerequisites: Two philosophy courses; PSY 103

Fall or spring, 3 credits

PHI 372 Ethical Inquiry (II)

An investigation of selected ethical problems.

Prerequisite: One philosophy course; PHI 104 recommended

Fall or spring, 3 credits

PHI 374 Philosophy in Relation to Other Disciplines(III)

The study of philosophy as it affects and is affected by other disciplines such as anthropology, science, sociology, the history of ideas, theology, and psychology.

Prerequisites: Upper-division standing; one philosophy course

Fall or spring, 3 credits

PHI 375 Philosophy of Law (III)

An examination of the concept of law and the nature of legal reasoning. The course will explore the relationship of law to other central philosophical and social ideas, such as freedom, rights, morality, authority, welfare, property, justice, equality, and constitutionalism.

Prerequisite: One philosophy course; PHI 104 or 105 or 372 recommended

Fall or spring, 3 credits

PHI 376 Philosophy and Medicine (III)

An investigation of the role that philosophical concepts play in medical thinking and practice. The course will focus on the philosophical foundations of concepts of health and disease; concepts of right, responsibility, and justice relevant to medical practice; promise-keeping and truth-telling in the doctor-patient relation; and specific moral problems that arise in medical practice.

Prerequisites: One philosophy course; PHI 104 recommended; HIS 135 or 316 or HMC 200 or 331 also recommended

Fall or spring, 3 credits

PHI 378 Philosophy of History (III)

A critical examination of theories about historical processes and developments and an evaluation of such concepts as progress, cause, purpose, and meaning in history. Pertinent materials will be drawn from historical and philosophic writings of such figures as Hegel, Nietzsche, Berdyaev, Collingwood, and Randall.
Prerequisites: One philosophy course; one history course
Fall or spring, 3 credits

PHI 380 Literature and Philosophy (III)

A study of the relations between literature and philosophy through an analysis of primary texts selected to demonstrate the precise nature of the relationship between the two disciplines. Topics will vary from term to term.
Prerequisites: One philosophy course; one literature course; PHI 109 or 110 recommended
Fall or spring, 3 credits

PHI 381 Aesthetics (II)

A study of selected classical texts in aesthetics (e.g., Plato's *Phaedrus*, Aristotle's *Poetics*, Kant's *Critique of Judgment*, or Nietzsche's *The Birth of Tragedy*.) Discussions will focus on such problems as the ontology of the work of art, its epistemological significance, the relation between fact and fiction, criteria of interpretation, or the political import of art. Readings in the classical texts may be supplemented by selections from contemporary authors.
Prerequisite: One philosophy course
Fall or spring, 3 credits

PHI 382 Poetics and Rhetoric (III)

A comparative study of philosophic concepts of poetics and rhetoric. Poetic theory will be studied as variously treating literature as expressive, imitative, pragmatic, and "pure" or objective. Rhetoric will be treated as stylistic ornamentation, propaganda, practical reasoning, and the basis of community. Special attention will be given to the distinction, identity, and overlap of poetics and rhetoric. Readings are from classical and contemporary authors such as Plato, Aristotle, Sartre, and Perelman.
Prerequisite: One philosophy or one literature course; PHI 109 or 110 recommended
Fall or spring, 3 credits

PHI 384 Philosophy and Feminism (III)

A course directed at isolating and critically analyzing conceptual issues of feminist concern such as "the other," "the feminine," patriarchy, the nature/culture dichotomy, as well as power, equality, oppression, and liberation. These will be related to such specific forms of human activity as work, sexuality, violence, marriage, family, education, love, language, art, myth, and

religion. The course demands an active participation in class discussion.

Prerequisite: One philosophy course; PHI 100 or 104 or 105 is recommended
Fall or spring, 3 credits

PHI 391, 392 Individual Systems of the Great Philosophers (I)

A detailed study of the works of a single great philosopher. May be repeated.
Prerequisite: One philosophy course
Fall (391) and spring (392), 3 credits each semester

PHI 393 Analysis of Philosophic Texts (I)

Detailed analysis of a major philosophic text. May be repeated.
Prerequisite: One philosophy course
Fall or spring, 3 credits

PHI 405 Analytic Philosophy (I)

An analysis of the major figures and problems of contemporary Anglo-American analytic philosophy. Readings from authors such as Russell, Wittgenstein, Quine, Ryle, and Austin.
Prerequisites: Two philosophy courses; PHI 206 or 308 recommended
Fall or spring, 3 credits

PHI 408 Phenomenology (I)

An investigation of the methods, concepts, and history of phenomenology with particular emphasis upon its philosophical basis. Readings from the major works of representative phenomenologists such as Husserl, Scheler, Heidegger, Merleau-Ponty, and Ricoeur are to be balanced by applications of phenomenological analysis to contemporary philosophical problems.
Prerequisites: Two philosophy courses; PHI 206 or 247 or 308 recommended
Fall or spring, 3 credits

PHI 415 The Philosophical Methodology of the Rig Veda (I)

Primary focus is on a method for bringing out the implied philosophy of the Rig Veda on topics such as knowledge, expression, the need to structure experience, and the different forms and insights generated by such structures: the embodied vision historical insights generate to guarantee human possession of what constitutes humanity.
Prerequisites: PHI 111 or 112; one other philosophy course
Fall or spring, 3 credits

PHI 420 Advanced Topics in Philosophy (I, II, III)

An advanced course treating a specialized issue or topic in philosophy or in philosophy and another discipline. The content of the course will be announced before the start of the term. May be repeated as subject matter differs.
Prerequisites: Senior major standing or five courses in philosophy
Schedule to be announced, 3 credits

PHI 435 Senior Seminar

An intensive study of an issue, topic, figure, or historical period in philosophy intended to provide both a culminating experience and final integration for senior philosophy majors. This seminar will emphasize careful reading, rigorous discussion, and extensive writing at an advanced level. The content of the seminar will be announced before the start of the term, and students will be consulted on the content as it proceeds.
Prerequisites: Senior major standing; six courses in philosophy
Fall and spring, 3 credits

PHI 487 Readings and Research in Methodology (II)

Advanced-level inquiry with individualized instruction in one particular philosophical style of reasoning. Consult undergraduate advisor for specific details. May be repeated.
Prerequisites: Senior major standing; permission of department
Fall and spring, 1 to 6 credits

PHI 488 Readings and Research in the Uses of Philosophy (III)

Advanced-level inquiry with individualized instruction in the application of philosophical tools to one of the special disciplines. Consult undergraduate advisor for specific details. May be repeated.
Prerequisites: Senior major standing; permission of department
Fall and spring, 1 to 6 credits

PHI 489 Readings and Research in the History of Philosophy (I)

Advanced-level inquiry with individualized instruction in the great philosophies of the past. Consult undergraduate advisor for specific details. May be repeated.
Prerequisites: Senior major standing; permission of department
Fall and spring, 1 to 6 credits

Graduate Courses

Qualified seniors may take 500-level courses with the permission of the Directors of Undergraduate and Graduate Studies. Please consult the bulletin boards outside the departmental offices for course descriptions and prerequisites.

Physical Education

Professor

A. Henry von Mechow, Chairperson, M.S., State University College at Cortland: Aquatics; general physical education.

Associate Professors

Paul H. Dudzick, Director of Men's Athletics, M.A., State University of New York at Stony Brook: Cross-country; general physical education.

Colin A. Martindale, Director of Professional Studies, Ph.D., City University of New York: General physical education.

John W. Ramsey, Coordinator of Undergraduate Curriculum, M.S., Hofstra University: General physical education.

Leslie F. Thompson, Ed.D., Columbia University: Tennis; general physical education.

Sandra Weeden, Director of Women's Athletics, M.Ed., University of North Carolina at Greensboro: General physical education.

Assistant Professors

Judith A. Christ, Adjunct, M.A., State University of New York at Stony Brook: Softball.

John DeMarie, M.A., Adelphi University: Aquatics; general physical education.

Claire Dorgan, part-time, M.S., C.W. Post College: Dance.

Nobuyoshi Higashi, part-time, M.A., New York University: Self-defense; judo.

Samuel B. Kornhauser, M.S., Southern Illinois University: Football; general physical education.

George Lukemire, part-time, B.S., Cornell University: Horsemanship.

Masataka Mori, part-time, B.A., Takushoku University: Karate.

David S. Rothenberg, part-time, M.S., Ithaca College: General physical education.

Robert B. Snider, B.S., College of William and Mary: Squash; general physical education.

Instructors

David B. Alexander, part-time, M.S., Adelphi University: Aquatics.

Patricia Ann Bostic, Director of Intramurals, M.S., Marshall University: General physical education.

Michael C. Garafola, part-time, B.A., State University of New York at Stony Brook: Baseball.

Kathryn Ann Koshansky, M.S., University of Illinois: Athletic training, first aid and safety.

Theresa Tiso, B.S., State University College at Cortland: Volleyball; general physical education.

Lecturers

Peter G. Angelo, part-time, Ph.D., State University of New York at Stony Brook: Aquatics.

John J. Barroncini, part-time, M.A., New York University: Aquatics.

Joseph P. Castiglie, Jr., part-time, B.A., State University of New York at Stony Brook: Basketball.

Theresa Febrey, B.S., State University College at Cortland: Soccer; general physical education.

Ira S. Levine, part-time, M.S., C.W. Post College: Athletic training.

Richard L'Hommedieu, part-time, M.A., Adelphi University: Tennis.

Declan X. McMullen, part-time, M.A., New York University: Basketball.

Shawn E. McDonald, M.S., Florida International University: Soccer; general physical education.

Gary A. Westerfield, part-time, M.A., State University of New York at Stony Brook: Track and field.

John M. Ziegler, part-time, B.S., Syracuse University: Lacrosse.

Physical education courses are devised to develop knowledge, understanding, and skills of a sport or dance activity selected by the student from a wide range of offerings.

Students in the College of Arts and Sciences may include at most four credits of 100-level courses toward the 120 credits required for the baccalaureate degree. Only three credits of physical education may be counted toward degree requirements in the College of Engineering and Applied Sciences.

Facilities

Physical education facilities include 12 tennis courts, a 400-meter track, a baseball field, a soccer field, four softball and intramural football fields, and general activity areas. The Gymnasium building contains a swimming pool, a large gym, a small gym, four squash courts, four handball courts, an exercise room, a universal gym room, and a dance studio.

Most physical education facilities may be used for recreational purposes when they are not scheduled for classes, intramural or intercollegiate events, or special events. A schedule of information covering recreation hours may be obtained in the Physical Education Office.

Medical Clearance for Participants

Students having health problems that limit their participation in physical activities must inform the Department of Physical Education of these limitations in writing each school year before participating in any activities. Those students who are unsure as to whether or not they can safely participate in a particular program should be evaluated at the University Health Service.

Areas of Activity

Individual and Team Sports, Self-Defense, Physical Conditioning
PEC 102, 105, 106, 107, 108, 109, 110, 112, 113, 145, 147, 148, 151, 152, 154, 155, 159, 161, 164, 168, 171

Gymnastics
PEC 117, 118, 119

Swimming and Water Safety
PEC 120, 121, 122, 123, 124, 125, 128, 129, 223, 226

Dance
PEC 130, 131, 133, 135, 136

Horsemanship
PEC 180, 181, 282

First Aid and Athletic Training
PEC 170, 310, 311

Participation in Intercollegiate Athletics
PEC 188-199

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

PEC 102 Racquetball/Squash

This is a basic course covering skills, rules, safety, and court etiquette.

Fall and spring, 1 credit

PEC 105 Weight Control

A course designed for the overweight to investigate various methods of weight and body control and figure improvement by way of such group activities as evaluation of current diet programs, group discussion, mild forms of physical exercise, and individual counseling.

Prerequisite: Written approval of student's family physician

Fall and spring, 1 credit

PEC 106 Basic Karate

Instruction in and practice of the fundamentals of karate.

Fall and spring, 1 credit

PEC 107 Intermediate Karate

A continuation of skills instruction in karate beyond the beginner level with testing for the various degree levels.

Prerequisite: PEC 106

Fall and spring, 1 credit

PEC 108 Judo

Instruction in and practice of the fundamentals of judo (breakfalls, throws, and grappling techniques. Limited application of skills to competitive randori (sparring) and shiai (contest).

Fall and spring, 1 credit

PEC 109 Self-Defense

Instruction in the various methods of protecting oneself from attack by use of various parries and falls.

Fall and spring, 1 credit

PEC 110 Basic Aikido (Tomiki Style)

The concept of Aikido as the spirit that carries the mind and controls the body will be studied. Course material includes fundamentals of principal arts of attacking, bending and twisting the joints, escape and defense against multiple attacks, and use of minimum strength.

Fall and spring, 1 credit

PEC 112 Bowling

A basic course in bowling including rules, scoring, and basic techniques of the game.

This is an extra-fee course.

Fall and spring, 1 credit

PEC 113 Basic Fencing

A beginning course in fencing including study of equipment, fitness, body position, and fencing skills. There will be an introduction to bouts.

Fall and spring, 1 credit

PEC 117 Basic Gymnastics

A survey experience for students with no background in gymnastics. It will include the fundamentals of conditioning exercise, tumbling and floor exercise, and gymnastic apparatus.

Fall and spring, 1 credit

PEC 118 Tumbling and Floor Exercise

The development of strength, agility, flexibility, and kinesthetic sense through the medium of tumbling and acrobatic movement. Moves (stunts) relating specifically to men's and women's floor exercise will be covered. At the conclusion of the course, students should be able to perform both an optional and beginner compulsory floor routine.

Prerequisite: PEC 117

Fall, 1 credit

PEC 119 Basic Gymnastic Apparatus

An overview of all gymnastic apparatus for men (parallel bars, high bar, rings, pommel horse and long-horse vaulting) and women (balance beam, uneven parallel bars, and side-horse vaulting). At the conclusion of the course, students should be able to perform the USGF and beginner compulsory routine and an optional routine on a piece of apparatus of the student's choice.

Prerequisite: PEC 118

Spring, 1 credit

PEC 120 Basic Swimming

Designed to equip students at the beginner level with basic swimming skills and knowledge. (See also PEC 128.)

Fall and spring, 1 credit

PEC 121 Intermediate Swimming

Designed to equip the deep-water swimmer with more advanced strokes and water skills.

Fall and spring, 1 credit

PEC 122 Advanced Swimming and Basic Rescue

Swimming strokes and related water skills at the level of Red Cross swimmers and advanced swimmers. Will also include instruction in basic rescue and water safety.

Prerequisites: PEC 121; skill proficiency test

Spring, 1 credit

PEC 123 Life Saving

This course is designed to help the student meet the requirements for the Red Cross certification in Advanced Life Saving.

Prerequisites: PEC 122; skill proficiency test

Fall and spring, 1 credit

PEC 124 Lifeguard Training

Preparation for the Red Cross certification in lifeguard training. The material to be covered includes: requirements and responsibilities of lifeguards, selection and training, preventive lifeguarding, emergency procedures, records and reports, equipment, health and sanitation, water rescues, search and recovery, and environmental conditions.

Prerequisites: PEC 123 and 170

Spring, 1 credit

PEC 125 Aerobic Swimming

The use of distance swimming and related activities to promote body conditioning with an emphasis on cardiovascular and muscular endurance. Attention to stroke technique will also be given in order to improve efficiency of movement.

Prerequisite: Intermediate-level swimming proficiency

Fall and spring, 1 credit

PEC 128 Basic Swimming for Non-Swimmers

Basic swimming course limited to non-swimmers. (See also PEC 120.)

Fall and spring, 1 credit

PEC 129 Fundamentals of Springboard Diving

An introduction to springboard diving with emphasis on approach, take-off, and water entry. The various categories of dives (forward, backward, inward, and twisting) will be covered.

Prerequisite: PEC 120

Fall and spring, 1 credit

PEC 130 Beginning Modern Dance

A study of the fundamentals of modern dance, including an analysis of movement, conditioning, and simple compositional forms.

Fall and spring, 1 credit

PEC 131 Intermediate Modern Dance

Development of modern dance techniques and movement awareness.

Prerequisite: PEC 130

Spring, 1 credit

PEC 133 Aerobic Dance

A rigorous body conditioning course based on the use of energetic dance forms set to music coupled with a moderate amount of jogging. This activity is designed to strengthen the cardiovascular system and increase flexibility, stamina, and muscle tone.

Fall and spring, 1 credit

PEC 135 Folk and Square Dance

This course will cover both European and American folk dances including American square dance.

Spring, 1 credit

PEC 136 Social Dance

Fundamental steps in such ballroom dances as fox trot, waltz, rhumba, cha-cha, tango, and lindy.

Fall and spring, 1 credit

PEC 145 Physical Conditioning

The acquisition of appropriate skills in and appreciation of physical conditioning. Instruction will be primarily devoted to improvement of muscular strength, flexibility, and endurance with some effort given to weight control. Activities will include weight training with the Universal gym machine and free weights, stretching, calisthenics, and other activities known for their physical conditioning benefits.

Fall and spring, 1 credit

PEC 147 Aerobic Fitness

A fundamental course in body conditioning with stress on cardiovascular endurance, muscular endurance, and flexibility. Students will develop an ability to maintain a high degree of aerobic fitness through long-distance running.

Fall and spring, 1 credit

PEC 148 Introduction to Road Racing

The improvement of the intermediate-level runner to a higher level of fitness. The course will provide an in-depth study and practice of running. The physiological, emotional, and nutritional aspects of aerobic fitness will be emphasized to prepare the student for road racing. Students will be required to serve as volunteer workers for one road race and as participants in at least three 5-to-15 kilometer races.

Prerequisite: PEC 147

Fall and spring, 1 credit

PEC 151 Tennis/Badminton

Introduction to the sports of tennis and badminton, including selection of equipment, basic skills, rules, safety, and courtesy. Class matches and tournaments will be included.

Fall and spring, 1 credit

PEC 152 Tennis/Volleyball

A beginning course covering the selection of equipment, basic skills, rules, safety, and etiquette of tennis and power volleyball. Skills practice and intra-class tournament play will be included.

Fall and spring, 1 credit

PEC 154 Archery/Volleyball

Basic skills, strategies, and rules in archery target shooting and in volleyball, with each activity culminating in a class tournament.

Fall and spring, 1 credit

PEC 155 Soccer

A course designed to familiarize students with the basic skill development. An

understanding of the sport is provided by examination of history, rules, boundaries, formation, and strategies. Students will be given an opportunity for intraclass play. May not be taken for credit after PEC 194.

Fall and spring, 1 credit

PEC 159 Badminton

A comprehensive course designed to develop basic and intermediate-level skill in badminton. Rules, strategies, and court courtesy will also be covered.

Fall and spring, 1 credit

PEC 161 Beginning Tennis

Complete introduction to tennis for the beginning player. Introductory approach to the game of tennis involving the description and selection of racquets, utilization of various grips, development of footwork, ground strokes, and singles and doubles play. Knowledge of court areas, tennis terminology, proper tennis etiquette, rules, and scoring procedures. Special emphasis on the fundamentals of the four major strokes (service, forehand, backhand, and volley).

Fall, 1 credit

PEC 164 Volleyball

A comprehensive course embodying all aspects of volleyball. Emphasis is placed on the development of the basic skills of the underhand pass, overhand pass, spike, serve, block, and offensive and defensive strategy. Skill development is accomplished through drills and regular team play.

Fall and spring, 1 credit

PEC 168 Introduction to Yoga (Hatha)

Instruction in various postures that are designed to enhance the physical condition of the individual through the use of breathing, relaxation, and meditation techniques.

Fall and spring, 1 credit

PEC 170 First Aid and Safety

An American Red Cross certification course designed to develop skills and knowledge of first aid and cardiopulmonary resuscitation for the immediate care given to an individual who has been injured or taken ill.

Fall and spring, 1 credit

PEC 171 Adapted Physical Education

Designed primarily for disabled students to allow them to participate in a formal course of physical education activities. Students will confer with the instructor to decide on a program best suited to individual needs.

Prerequisites: Approval of student's physician; permission of instructor

Fall and spring, 1 credit

PEC 180 Beginning Horsemanship

Designed for the student with little or no experience in English riding. Covers basic controls and techniques employed in Hunter

seat equitation. The theory program will begin the study of the environmental needs of the horse. This is an extra-fee course.

Fall and spring, 1 credit

PEC 181 Advanced Beginning Horsemanship

Designed for the student who has acquired the basic skills in Hunter seat equitation. Techniques will be refined and cross-country and beginning jumping will be covered. Theory will include breeds, colors, and sports. This is an extra-fee course.

Prerequisite: PEC 180

Fall and spring, 1 credit

PEC 188-199 Participation in Intercollegiate Sports

PEC 188 Softball

PEC 189 Basketball

PEC 190 Baseball

PEC 191 Cross Country

PEC 192 Football

PEC 193 Lacrosse

PEC 194 Soccer

PEC 195 Squash

PEC 196 Swimming

PEC 197 Tennis

PEC 198 Volleyball

PEC 199 Track and Field

Participation in a sport at the intercollegiate level including all the instruction, practice, and competition associated with such an activity. Advanced skills and strategies will be covered. Each course may be repeated once for credit. Satisfactory/Unsatisfactory grading only.

Prerequisite: Permission of instructor

Fall and spring, 1 credit

PEC 223 Water Safety Instructor

This course is designed to help the student meet the requirements for certification as a Red Cross water safety instructor.

Prerequisites: PEC 123; skill proficiency test

Fall and spring, 2 credits

PEC 226 Instructor of Adapted Aquatics

This course is designed to help the student meet the requirements for certification as a Red Cross instructor of adapted aquatics. The work includes practical experience in teaching swimming to disabled persons.

Prerequisite: PEC 223

Fall, 2 credits

PEC 282 Intermediate Horsemanship

A stable management course: the care of the horse and the control of its environment; first aid and training of the young horse. Riding will cover sophisticated jumping techniques in the ring and in the hunt course. This is an extra-fee course.

Prerequisite: PEC 181

Fall and spring, 2 credits

PEC 310 Basic Athletic Training

Basic instruction for students interested in athletic training or the health care of athletes in the prevention, protection, and first aid care of injuries occurring in athletics. The nature and evaluation of injuries, their mechanisms, protective devices utilized, and rehabilitation will be discussed. Consists of lecture and laboratory experience.

Prerequisites: BIO 230, 232; permission of instructor

Fall, 3 credits

PEC 311 Advanced Athletic Training

Advanced instruction in athletic training for selected students interested in national certification as athletic trainers. Muscle testing, methods of conditioning, remedial exercises, dietary concerns, modality application, clinical procedures, and legal aspects of athletic training will be emphasized. Consists of lecture and laboratory experience.

Prerequisites: PEC 310; Red Cross first aid and CPR certification

Spring, 3 credits

PEC 475 Undergraduate Teaching Practicum

Selected upper-division undergraduates will assist faculty members teaching physical

education activity classes. In addition to working as tutors during instructional periods, students will have regular conferences with a faculty supervisor to discuss problems and general teaching methods.

Satisfactory/Unsatisfactory grading only, and students shall be limited to a total of three credits in this department. Credit granted will be equal to that of the course to which the student is assigned.

Prerequisites: Advanced skill level; recommendation of instructor; permission of chairperson

Fall and spring, 1 or 2 credits

Department of Physics

Einstein Professor

Chen Ning Yang, Director of the Institute for Theoretical Physics, D.Sc., Princeton University; Ph.D., University of Chicago: Theoretical physics: field theory, statistical mechanics, particle physics.

Professors

Philip B. Allen, Ph.D., University of California, Berkeley: Theoretical solid state physics: superconductors and superconductivity.

Nandor L. Balazs, Ph.D., University of Amsterdam: Theoretical physics: statistical mechanics; general relativity.

Martin Blume, part-time, Ph.D., Harvard University: Theoretical solid-state physics; magnetic properties of matter.

Peter Braun-Munzinger, Ph.D., University of Heidelberg: Experimental nuclear physics.

Gerald E. Brown, Ph.D., Yale University; D.Sc., University of Birmingham: Theoretical nuclear physics. Member, Institute for Theoretical Physics.

Ernest D. Courant, Emeritus, Ph.D., University of Rochester: Theory of high-energy accelerator design. Member, Institute for Theoretical Physics.

Robert L. deZafra, Ph.D., University of Maryland: Experimental atomic physics; optical pumping and double resonance quantum electronics.

Max Dresden, Executive Officer of the Institute for Theoretical Physics, Ph.D., University of Michigan: Theoretical physics: field theory, statistical mechanics, particle physics.

Leonard Eisenbud, Emeritus, Ph.D., Princeton University: Theoretical physics: nuclear theory, foundations of quantum theory.

Roderich Engelmann, Ph.D., University of Heidelberg: Experimental elementary particle physics.

Arnold M. Feingold, Ph.D., Princeton University: Theoretical physics: nuclear structure, beta decay.

Guido Finocchiaro, Ph.D., Catania University: Experimental particle physics.

David B. Fossan, Ph.D., University of Wisconsin: Experimental nuclear physics: nuclear structure and reactions.

David Fox, Director of the Graduate Program in Physics, Ph.D., University of California, Berkeley: Theoretical physics: solid state theory, properties of molecular crystals.

Alfred S. Goldhaber, Ph.D., Princeton University: Theoretical physics; nuclear theory; particle physics. Member, Institute for Theoretical Physics

Maurice Goldhaber, Adjunct, Ph.D., Cambridge University: Nuclear and particle physics. Member, Institute for Theoretical Physics

Myron L. Good, Ph.D., Duke University: Experimental elementary particle physics.

Paul D. Grannis, Ph.D., University of California, Berkeley: Experimental high-energy physics: elementary particle reactions.

Andrew D. Jackson, Ph.D., Princeton University: Nuclear theory.

Peter B. Kahn, Chairperson, Ph.D., Northwestern University: Theoretical physics: the many-body problem, statistical properties of spectra; curriculum development.

Yi-Han Kao, Ph.D., Columbia University: Experimental solid-state physics: electronic structure of metals and semimetals, superconductivity.

Janos Kirz, Ph.D., University of California, Berkeley: Experimental particle physics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1975-76.

T.T.S. Kuo, Ph.D., University of Pittsburgh: Nuclear theory.

Edward D. Lambe, Ph.D., Princeton University: Experimental atomic and nuclear physics, beta and gamma decay; curriculum development.

Linwood L. Lee, Jr., Ph.D., Yale University: Experimental nuclear structure.

Juliet Lee-Franzini, Ph.D., Columbia University: Experimental particle physics.

Barry M. McCoy, Ph.D., Harvard University: Statistical mechanics. Member, Institute for Theoretical Physics

Robert L. McGrath, Ph.D., University of Iowa: Experimental physics: nuclear structure.

John H. Marburger, III, Ph.D., Stanford University: Theoretical laser physics.

Harold J. Metcalf, Ph.D., Brown University: Atomic physics; level crossing techniques. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74.

Herbert R. Muether, Director of the Undergraduate Program in Physics, Ph.D., Princeton University: Experimental nuclear physics; neutron physics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1977-78.

Robert Nathans, Ph.D., University of Pennsylvania: Experimental solid state physics.

Homer A. Neal, Ph.D., University of Michigan: Experimental high-energy physics.

Hwa-Tung Nieh, Ph.D., Harvard University: Theoretical physics; elementary particles. Member, Institute for Theoretical Physics.

Peter Paul, Ph.D., University of Freiburg: Experimental nuclear physics.

T. Alexander Pond, Emeritus, Ph.D., Princeton University: Positron processes; beta and gamma decay.

Henry B. Silsbee, Ph.D., Harvard University: Experimental physics; molecular and atomic beams; magnetic resonance.

John Smith, Ph.D., University of Edinburgh: Elementary particle physics. Member, Institute for Theoretical Physics.

Gene D. Sprouse, Ph.D., Stanford University: Experimental nuclear structure.

Arnold A. Strassenburg, Ph.D., California Institute of Technology: Experimental particle physics; high-energy instrumentation; curriculum development.

Clifford E. Swartz, Ph.D., University of Rochester: Experimental high-energy physics; school curriculum revision.

John S. Toll, Emeritus, Ph.D., Princeton University: Scattering; elementary particle theory.

Peter Van Nieuwenhuizen, Ph.D., Utrecht University: Theoretical physics. Member, Institute for Theoretical Physics.

William I. Weisberger, Ph.D., Massachusetts Institute of Technology: Theoretical physics. Member, Institute for Theoretical Physics.

Lee R. Wilcox, Ph.D., Stanford University: Quantum electronics.

Associate Professors

Erlend H. Graf, Ph.D., Cornell University: Experimental low-temperature physics.

Peter M. Koch, Ph.D., Yale University: Experimental atomic physics; synchrotron radiation.

James Lukens, Ph.D., University of California, San Diego: Experimental solid state physics.

Michael Marx, Ph.D., Massachusetts Institute of Technology: Experimental high-energy physics.

Robert L. McCarthy, Ph.D., University of California, Berkeley: Experimental elementary particle physics.

Richard A. Mould, Ph.D., Yale University: Theoretical physics: general relativity; quantum theory of measurements.

Robert Shrock, Ph.D., Princeton University: Theoretical physics: gauge theories. Member, Institute for Theoretical Physics.

George Sterman, Ph.D., University of Maryland: Theoretical physics: elementary particles. Member, Institute for Theoretical Physics.

Assistant Professors

Charles Archie, Ph.D., Cornell University: Experimental solid state physics.

Sudip Chakravarty, Ph.D., Northwestern University: Theoretical solid state physics.

Steven A. Kivelson, Ph.D., Harvard University: Theoretical solid state physics.

Jacques Perk, Ph.D., University of Leiden: Statistical mechanics. Member, Institute for Theoretical Physics.

Martin Rocek, Ph.D., Harvard University: Theoretical physics. Member, Institute for Theoretical Physics.

Peter W. Stephens, Ph.D., Massachusetts Institute of Technology: Experimental solid state physics.

Teaching Assistants

Estimated number: 46

Students wishing to major in physics may select a sequence of courses designed to serve as a preparation for graduate study in physics or for employment in industry or research. Instead they may select a sequence designed to provide considerable knowledge of the subject but not intended as preparation for a research-oriented career in physics. This latter group of students might include those who will some day work in the areas of science teaching, administration relating to science or technology, the history of science, technical writing, patent law, science and public policy, etc.

Physical Facilities

Physics laboratories for undergraduate experiments contain equipment specifically designed to elucidate the principles of physics that are under discussion in both the lectures and recitation sections. Students perform track and air table experiments, as well as some elementary work using

oscilloscopes, etc. At the advanced level, facilities are available for laboratory work in the basic elements of circuit theory, modern electronic logic circuitry, and the role of minicomputers. Advanced research laboratories permit students to gain expertise in nuclear, high-energy, low-temperature, solid-state, and surface physics, and in quantum electronics. Students work closely with faculty doing research in these areas, and are given the opportunity to work with an ongoing research group using specifically designed research equipment.

Minimum Requirements for the B.S. in Physics

	<i>Credits</i>
1. Ten courses in the department including the following upper-division courses: PHY 301, 303, 306, 308, 335, 445. Each upper-division course must be completed with a grade of C- or higher, and at least four upper-division courses must be taken at Stony Brook	34
2. Four semesters of mathematics: MAT 131, 132 or 141, 142, (MAT 125, 126, 127, 9 credits, may be substituted), MAT 231 or 241, 306 or 307.	14
3. Twelve credits of other science, mathematics, or science-related courses (e.g., History of Science, Science and Public Policy) chosen with the approval of the departmental advisor. PHY 333 and PHY 339 may be included.	12
Total	60

All courses used to satisfy these minimum requirements must be taken for a letter grade.

Students wishing to major in physics must, at the end of their sophomore year, consult with their departmental advisor in order to draw up preliminary plans of study that will then be submitted to the department. The plan may be revised at any time with the advisor's approval.

Honors

To receive the Bachelor of Science in physics with honors, a student must take ten courses in the department at the junior level or above, receiving an overall grade point average in these courses of at least 3.3. Two of the ten courses must be chosen from among the following: PHY 445, 446 Senior Laboratory and PHY 487, 488 Research.

The Research Program

A student desiring to prepare for graduate study in physics or for a research-oriented career in physics has considerable flexibility in the choice of courses. The following sample program is suggested:

Freshman Year

PHY 101 General Physics I
PHY 102 General Physics II
MAT 131 Calculus I or 141 Calculus Alpha
MAT 132 Calculus II or 142 Calculus Beta

Sophomore Year

PHY 251 General Physics III
PHY 252 Optics and Waves
MAT 231 Calculus III: Linear Algebra or 241 Calculus Gamma: Linear Algebra
MAT 306 Calculus IV: Multivariate Calculus or 307 Calculus Delta: Multivariate Calculus
CHE 131, 132 or 141, 142 General Chemistry or Honors Chemistry
CHE 133, 134 or 143, 144 General Chemistry Laboratory or Honors Chemistry Laboratory

Junior Year

PHY 301, 302 Electromagnetic Theory
PHY 303 Mechanics
PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics
PHY 308 Quantum Physics
At least one semester of PHY 335, 336 Junior Laboratory
MAT 341 Advanced Calculus: Differential Equations
MAT 342 Advanced Calculus: Complex Functions

Senior Year

PHY 445 Senior Laboratory I
Three selections from courses listed below:
PHY 405 Advanced Quantum Physics
PHY 408 Relativity
PHY 431 Nuclear and Particle Physics

PHY 446 Senior Laboratory II
PHY 447, 448 Tutorial in Advanced Topics
PHY 472 Solid State Physics
PHY 487, 488 Research

The Astrophysics Program

A student wishing to pursue a career in astrophysics must take a program of study that satisfies the minimum requirements for a B.S. in physics. In addition, the student should take a concentration in those courses offered by the Earth and Space Sciences or Physics Departments that satisfy his or her educational goals.

The Physics of Materials Program

A student wishing to pursue a career in engineering physics, with emphasis on materials science and engineering, would, in addition to completing the requirements for the B.S. in physics, take courses during the junior and senior year in the Department of Materials Science and Engineering. After the successful completion of a minimum of five courses in the Department of Materials Science and Engineering (the student should consult with the Director of the Undergraduate Program in the Department of Physics and with the Chairperson of the Department of Materials Science and Engineering), the student would be eligible for admission to the master's degree program in materials science and engineering.

Certification for Secondary-Level Teaching

The requirements for provisional certification are set down in detail in the State-approved *Competency-Based Teacher Educational Program in Physics, 7-12*. (The complete document may be examined in the department office.) Graduates of the program are expected to display a firm grasp of fundamental educational principles, including historical, philosophical, psychological, and sociological perspectives. They must demonstrate a flexible and adaptive understanding of the basic principles of mechanics, electricity and magnetism, optics, thermodynamics and statistical mechanics, and modern physics.

In accordance with the principles of

competency-based learning, the course requirements for this program are somewhat flexible, depending on the background and status of the student entering. Each program of study will be determined in consultation with the Director of the Physics Teacher Preparation Program. After entrance to the program (see below), all students will normally take PHY 450 Supervised Secondary School Teaching and PHY 454 Student Teaching Seminar.

Requirements for Entrance into the Professional Education Program

Declaration of Departmental Major: Prior to entrance in the Physics Secondary Teacher Preparation Program, the student must have officially declared a major in the Department of Physics.
Interview: The candidate must have a personal interview with the Director of the Physics Teacher Preparation Program.

Admission to Student Teaching: In order to obtain the recommendation of the Director of the Physics Teacher Preparation Program for admission to student teaching, the candidate must have completed six credits in foundations of education courses (including SSI 350 Foundations of Education), SSI 265 Drug and Alcohol Education, PHY 339 Materials and Methods in Teaching Physics with a grade of C or above, have earned at least a 2.0 grade point average in all physics and mathematics courses completed, and have an overall cumulative grade point average of at least 2.0.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

Any course above the 100 level that is to be used as a prerequisite for other courses must be completed with a grade of C- or higher.

The courses General Physics I-III present an intensive introduction to classical and modern physics for those who may major in physics, some other physical science, or engineering.

PHY 100 Quantitative Methods in Science

Instruction and practice in the methods of measuring physical phenomena and the representation and analysis of data. Although simple laboratory work will be done, the emphasis is on the transition methods from

observation with appropriate precision to interpretation in terms of functional relationships. The course is designed as useful preparation for students who will later take PHY 101. Three one-hour lectures, one recitation, and two laboratory hours per week.

Fall and spring, 4 credits

PHY 101, 102 General Physics I, II

An introductory survey of classical physics, in which calculus is used concurrently with its development in MAT 131, 132.

Mechanics, wave motion, kinetic theory, and thermodynamics are discussed during the first semester; electromagnetism, electric circuit theory, and optics during the second. Three lectures, one recitation, and two laboratory hours per week.

Corequisite for PHY 101: MAT 125 or 131 or 141

Prerequisite for PHY 102: PHY 101

Corequisite for PHY 102: MAT 126 or 132 or 142

Fall and spring, 4 credits each semester

PHY 103, 104 Physics for the Life Sciences

Primarily for students majoring in biological sciences or in preclinical programs. A general introduction to physics, with applications to biological systems. Topics include mechanics, fluid mechanics, electromagnetism, optics, acoustics, and radiation phenomena. Three lectures, one recitation, and two laboratory hours per week.

Prerequisites for PHY 103: MAT 125 or 131 or 141; CHE 132 or 142

Prerequisite for PHY 104: PHY 103

Fall (103) and spring (104), 4 credits each semester

PHY 110 Energy Resources and the Environment

An investigation of the role of energy in our civilization showing interaction of pure science, applied science, and technology and their impact on the environment and everyday life. Discussion centers on current status of energy resources and physical principles of energy conversion. These principles are illustrated by examining some present (e.g., fission reactors) and future (e.g., magneto-hydrodynamic generators) energy conversion systems. The environmental impact of the present rate of energy consumption by our society is discussed. The course is intended for both non-science and science majors. It may not be counted as one of the ten departmental courses required for the B.S. degree program in physics.

Fall and spring, 3 credits

PHY 117, 118 Physics and Biological Systems

A one-year sequence in introductory physics for students entering undergraduate health science professional programs. Topics studied will include the mechanics of particles, properties of solids, fluids and gases, thermodynamics, electricity and magnetism, electrical circuits, wave motion and sound, optics, elementary atomic structure, X-rays, nuclear physics, and applications to biological systems such as the eye, ear, and heart. Radiation phenomena will be studied with reference to their therapeutic use. Three lecture hours and one three-hour laboratory period per week.

Prerequisite for PHY 117: High school algebra and trigonometry

Prerequisite for PHY 118: PHY 117

Fall (117) and spring (118), 4 credits each semester

PHY 137, 138 The Nature and Use of Physical Science

A nonmathematical course about physics to provide some broad scientific background for the educated citizen in an increasingly technological society. The course will be given as a sequence of six relatively independent modules, three per semester.

The modules will be devoted to topics of current interest such as physics and space technology, energy principles and sources, quantum and the quark, physics of sound and hearing, space-time and cosmology, physics of light and sight, physics of condensed matter, and science and society. A student receives three credits for PHY 137 after successful completion of any three of these modules. Each additional module successfully completed during the academic year earns one credit for PHY 138. Questions on how to register for these courses should be addressed to the Director of the Undergraduate Program in Physics.

Fall and spring, PHY 137: 3 credits; PHY 138: 1, 2, or 3 credits

PHY 251 General Physics III

An introduction to the concepts of modern physics. The classical phenomena of forced, damped, harmonic motion and waves are studied in detail to provide a firm understanding of classical interference. The wave aspects of material particles, the concept of wave function, and other fundamentals of the quantum theory are then discussed and related to atomic structure, nuclear structure, and the physics of the solid state. Three lecture hours and one three-hour laboratory per week.

Prerequisite: PHY 102

Corequisite: MAT 221 or 231 or 241

Fall and spring, 4 credits

PHY 252 General Physics IV

Continuation of PHY 251. Further development of mathematical treatment of

waves and interference phenomena with applications to and examples from the fields of optics and solid-state physics. Three lecture hours and one three-hour laboratory per week.

Prerequisite: PHY 251

Fall and spring, 4 credits

PHY 301, 302 Electromagnetic Theory

Review of elementary electromagnetic phenomena and their unification in Maxwell's equations; applications of the theory to static and changing electric and magnetic fields, interaction of the fields with bulk matter, circuit theory, interaction of charged particles with electromagnetic fields, propagation of electromagnetic waves, and radiation.

Prerequisites to PHY 301: PHY 252; MAT 306 or 307

Corequisite to PHY 301: MAT 341

Prerequisite to PHY 302: PHY 301

Fall and spring, 3 credits each semester

PHY 303 Mechanics

The Newtonian formulation of classical mechanics is reviewed and applied to more advanced problems than those considered in PHY 101, 102. The Lagrangian and Hamiltonian methods are then derived from the Newtonian treatment and applied to various problems.

Prerequisites: PHY 252; MAT 306 or 307

Fall and spring, 3 credits

PHY 306 Thermodynamics, Kinetic Theory, and Statistical Mechanics

The course is in two parts. Those relations among the properties of systems at thermal equilibrium, which are independent of a detailed microscopic understanding, are developed by use of the first and second laws of thermodynamics. The concepts of temperature, internal energy, and entropy are analyzed. The thermodynamic potentials are introduced. Applications to a wide variety of systems are made. The second portion of the course, beginning with the kinetic theory of gases, develops elementary statistical mechanics, relates entropy and probability, and treats simple examples in classical and quantum statistics.

Prerequisites: PHY 251; MAT 221 or 231 or 241

Corequisite: PHY 252

Fall and spring, 3 credits

PHY 308 Quantum Physics

An introduction to the concepts and mathematical methods of quantum mechanics. Some stress will be placed on historical development. Topics will include early quantum theory; Schrodinger's equation in time-dependent and time-independent forms; one- and three-dimensional solutions, including the

treatment of angular momentum and spin; and perturbation theory. Applications to simple systems, especially the hydrogen atom, will be stressed.

Prerequisites: PHY 301 and 303
Fall and spring, 3 credits

PHY 333 Physical Principles Applied to Living Systems

Topics will include the special sensory systems (vision and hearing) from the physical, neutral, molecular, and psychophysical viewpoints; the operation of the nervous system as both a communications network and a biochemical phenomenon; the effects of electromagnetic radiation at ionizing and nonionizing energies, as well as the effects of mechanical radiation (ultrasound); the structural system and the functions of muscles with accent on the heart muscle; and a detailed treatment of several types of modern instrument systems used in biological research. May not be counted as one of the ten departmental courses required for the degree.

Prerequisite: PHY 102 or 104
Spring, 3 credits

PHY 335, 336 Junior Laboratory I, II

An introduction to modern analog and digital electronics (integrated circuits and transistors). PHY 335 introduces the oscilloscope, function generator, digital multimeter, power supplies, frequency counter, operational amplifier circuits, basic logic gates, flip-flop switches, and amplifiers. PHY 336 treats these topics in more depth and involves programming and interfacing a 6502 microprocessor-based microcomputer. A microcomputer interfacing project is required of all students.

Prerequisite to PHY 335: PHY 252

Prerequisite to PHY 336: PHY 335

Fall and spring (335), spring (336), 3 credits each semester

PHY 339 Materials and Methods in Teaching Physics

Designed for prospective teachers of physics in secondary schools and two-year colleges, the course emphasizes methods and materials appropriate to the teaching of introductory physics and stresses recent curriculum developments. Students are required to become familiar with texts, laboratory materials, and other teaching aids, and are given the opportunity to demonstrate their proficiency in peer teaching situations. May not be counted as one of the ten departmental courses required for the degree.

Prerequisite: PHY 252

Spring, 3 credits

PHY 405 Advanced Quantum Physics

Further development and extension of the principles introduced in PHY 308. Topics will include the quantum mechanical description of identical particles, symmetry principles, the structure of multi-electron atoms, the application of perturbation theory to radiative transitions, external perturbations (Zeeman and Stark splitting), an introduction to the matrix formulation of quantum theory, and the quantum mechanical description of scattering.

Prerequisites: PHY 303 and 308; MAT 341
Fall and spring, 3 credits

PHY 407 Physics of Continuous Media

Topics to be covered include the response of non-ideal solids to stress, the properties of compressible fluids, viscosity, momentum transfer in fluid motion, irrotational flow, wave motion in gases, acoustics, conducting fluids, magneto-hydrodynamics waves, the physics of fully ionized gases, dynamics of degenerate fluids, application to magnetic plasmas, etc. This course is of interest to, among others, potential astrophysicists, plasma physicists, low-temperature physicists, and geophysicists.

Prerequisites: PHY 303 and 306
Fall, 3 credits

PHY 408 Relativity

A review and development of the special theory of relativity and an introduction to general relativity with applications to cosmology.

Prerequisites: PHY 302 and 303; MAT 342
Spring, 3 credits

PHY 431 Nuclear and Particle Physics

The topics will include the interaction of radiation with matter, radiation detectors, nuclear structure, nuclear reactions, nuclear forces, accelerators, the properties of elementary particles and resonances.

Applications of quantum mechanics and the role of symmetry principles will be stressed.

Prerequisite: PHY 308

Spring, 3 credits

PHY 445, 446 Senior Laboratory I, II

A number of historically important experiments are studied and performed with the aid of modern instrumentation. As they progress, students are encouraged to pursue independent projects in which there are no rigidly fixed formats or procedures. Primary emphasis is on the development of experimental skills and on professionally acceptable analysis and presentation of results, both in written and oral form. Projects are typically chosen from such fields as atomic and nuclear spectroscopy, particle physics, solid state and low-temperature physics, optics, and electromagnetism. Two three-hour laboratory sessions per week.

Prerequisites: PHY 308 and 335

Fall and spring, 3 credits each semester

PHY 447, 448 Tutorial in Advanced Topics

For upper-division students of unusual ability and substantial accomplishments, reading courses in advanced topics may be arranged. Prior to the beginning of the semester, the topic to be studied is selected by the supervising member of the faculty and a reading assignment is planned. Weekly conferences with this member of the faculty are devoted to discussion of material, resolution of problems encountered, and assessment of the student's progress. May be repeated.

Prerequisite: Permission of the Director of the Undergraduate Program in Physics
Fall and spring, 2 to 4 credits each semester at discretion of instructor

PHY 450 Supervised Secondary School Student Teaching

Prospective secondary school teachers receive supervised practice teaching in a selected Long Island secondary school. The student teacher reports to that school for a full school day for the semester. The supervising teacher helps the student to execute his or her teaching assignments and to interpret and evaluate his or her experience. Not for major credit.

Satisfactory/ Unsatisfactory grading only.
Prerequisites: PHY 339; permission of Director of Physics Teacher Preparation Program

Corequisite: PHY 454

Fall, 12 credits

PHY 454 Student Teaching Seminar

Seminar on problems and issues in teaching physics at the secondary school level. Analysis and commentary based on students' experience in their classroom assignments. Not for major credit.

Corequisite: PHY 450

Fall, 3 credits

PHY 472 Solid-State Physics

Introduction to the principal types of solids with emphasis on their electrical and magnetic properties; elementary theory of electrons in metals; and energy bands. Applications to semiconductors, superconductors; para- and ferromagnetism, magnetic resonance.

Prerequisites: PHY 306 and 308

Fall, 3 credits

PHY 475 Undergraduate Teaching Practicum

Selected undergraduates collaborate with the faculty in teaching at the introductory level. In addition to working as tutors and as laboratory assistants, students will meet once a week with a faculty supervisor to discuss

problems that have been encountered and to plan future activities. Students will generally be assigned to assist in courses they have completed and in which they have excelled. Not for major credit and not repeatable. Satisfactory/Unsatisfactory grading only. *Prerequisites:* PHY 102 or 104; interview; permission of Director of Undergraduate Program in Physics
Fall and spring, 2 credits

PHY 487, 488 Research

With the approval of the faculty, a student may conduct research for academic credit.

Research proposals must be prepared by the student and submitted for approval by the faculty before the beginning of the credit period. The work is performed under the supervision of a member of the faculty. An account of the work and the results achieved is submitted to the faculty before the end of the credit period. May be repeated.

Prerequisite: Permission of Director of the Undergraduate Program in Physics
Fall and spring, 2 to 4 credits each semester at discretion of instructor

Graduate Courses

Qualified students may take 500-level courses with the permission of the department chairperson. See *Graduate Bulletin* for details.

Quantum Mechanics
Statistical Mechanics
Nuclear Physics
Classical Physics
Astrophysics
Solid-State Physics
Elementary Particle Physics

Department of Political Science

Professors

Yassin El-Ayouty, part-time, Ph.D., New York University: International relations.

Jacob Javits, Adjunct, L.L.B., New York University Law School: American government, world politics.

Elliot Kleinman, part-time, J.D., Brooklyn Law School: Business law.

Lee E. Koppelman, part-time, D.P.A., New York University: Regional planning; resource management.

Milton Lodge, Ph.D., University of Michigan: Political psychology; political behavior.

Frank Myers, Chairperson, Ph.D., Columbia University: Comparative politics, political theory.

Merton Reichler, Adjunct, M.A., Columbia University: Constitutional law.

Howard A. Scarrow, Ph.D., Duke University: Comparative politics; American government.

Martin B. Travis, Director of Undergraduate Studies, Ph.D., University of Chicago: International law, comparative foreign policy.

Bernard Tursky, Emeritus, Diploma, Lowell Institute, Massachusetts Institute of Technology: Political psychology; psychophysiology.

Stuart Valins, Ph.D., Columbia University: Group dynamics; environmental psychology.

Jay C. Williams, Emeritus, Ph.D., University of Chicago: Political ideologies; political film.

Associate Professors

Alan I. Abramowitz, Ph.D., Stanford University: American government and politics; public policy; political theory.

James Enelow, Ph.D., University of Rochester: Voting and social choice theory; political behavior.

Shanto Iyengar, Ph.D., University of Iowa: Political psychology; public opinion; political behavior; research design and methodology.

Helmut Norpoth, Director of Graduate Studies, Ph.D., University of Michigan: Political behavior; legislative process; research process; research methods.

Mark Schneider, Ph.D., University of North Carolina at Chapel Hill: Public policy; urban politics.

Assistant Professors

Philip R. Baumann, Ph.D., Michigan State University: International and comparative politics.

Albert D. Cover, Ph.D., Yale University: American politics and institutions; legislative politics.

Ruth C. Hamill, Ph.D., University of Michigan: Social psychology and law; social perception and cognition.

John A. Herstein, Ph.D., Carnegie-Mellon University: Political psychology; American institutions.

John Scholz, Ph.D., University of California, Berkeley: Public policy; public administration.

Jeffrey A. Segal, Ph.D., Michigan State University: American institutions; constitutional and public law.

Lecturers

Roger McDonald, part-time, M.A., New School for Social Research: American politics; constitutional law.

Paul Weiden, Adjunct, L.L.D., University of Frankfurt: International law.

Teaching Assistants

Estimated number: 5

Requirements for the Major in Political Science

The major in political science leads to the Bachelor of Arts degree. The following courses are required.

	<i>Credits</i>
A. Study Within the Area of the Major	
1. Three out of four of the following courses:	9
POL 101 World Politics	
POL 102 American Government	
POL 103 Comparative Politics	
POL 104 Political Behavior	
2. Political Science electives: /	24
a. All must be selected from courses numbered 200 or above, and at least 12 credits must be numbered 300 or above. At least 12 of these 24 credits must be selected from courses in one of the programs of study listed below. No more than six credits from internship courses may be applied.	

- b. No grade less than C in courses numbered 300 and above may be used to fulfill major requirements.
- c. No more than 6 of the 24 political science credits at the 200 level or above may be taken at another institution (exceptions made in the case of planned foreign study). Only transfer courses with C or higher will be accepted.

B. Study in Related Areas
 Two courses numbered 300 or above, offered by another department in subjects directly related to the chosen program of study. Courses taken at another institution may be used to satisfy this requirement if they were passed with a grade of C or higher.

6	
Total	39

Note: With the exception of internship courses, all courses in the major must be taken for a letter grade.

Programs of Study

Comparative Politics and International Relations

POL 210, 211, 305, 308, 311, 312, 313, 335, 337, 339, 401, 402.

American Government and Public Policy

POL 220, 260, 261, 317, 320, 322, 323, 324, 325, 326, 327, 362, 363, 366, 367, 368.

Political Behavior and Political Psychology

POL 238, 240, 317, 323, 343, 346, 348, 349, 367.

Requirements for the Minor in Political Science

The minor in political science, which requires 24 credits, is organized around one of the three programs of study listed for the major and must be approved by the department's Director of Undergraduate Studies. The minor will include the two 100-level courses that are appropriate for the program of study selected, and 18 credits of courses in the program of study, of which at least 9 credits must be at the 300 level or above.

No more than six credits of internship may be applied to the minor. All courses except internship must be taken for a letter grade, and all upper-division courses must be passed with a grade of C or higher. No more than six credits of courses at the 200 level or above may be taken at another institution.

B.A./M.A. Program in Public Affairs

The five-year program in public affairs combines advanced training in a student's senior year with a focused program of study in an additional year of graduate work to prepare students for careers in government, not-for-profit institutions, or consulting firms dealing with state and local governments.

In the senior year a student in this program will take four graduate courses: a two-course statistics sequence and a two-course administration/policy analysis sequence. These 12 credits are applied toward the B.A. degree. After admission to the Graduate School, the student will take a variety of advanced electives in policy analysis, management, and the investigation of a substantive area of the student's choice. The student is awarded the M.A. degree after 30 credits of graduate work.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

POL 101 World Politics

Analysis of the basic concepts and issues of international relations in the contemporary international system. The behaviors of states and their decision makers will be considered according to various models of national and international conflict. The relationship between the characteristics of nations and their foreign policies will be studied on a comparative basis.
Fall and spring, 3 credits

POL 102 Introduction to American Government

What the informed citizen and specialist should know about the organization of American government, including the Constitution and what it means today, the

Congress, political parties, pressure groups, growth of the Presidency, the Supreme Court, judicial review, federalism, separation of powers, and the Bill of Rights.
Fall and spring, 3 credits

POL 103 Introduction to Comparative Politics

Analysis of political institutions and processes in the contemporary world, emphasizing the interaction of political structures and processes in a variety of political settings.
Fall and spring, 3 credits

POL 104 Political Behavior

Survey of the types, modes, and conditions of political activity (political participation, apathy, alienation); political consensus and cleavages (aggression, violence, war); political socialization and recruitment of political elites; psychological and social basis of uniformities and variations in political behavior.
Fall and spring, 3 credits

POL 210 Foreign Policy in the Middle East

Survey of problems involved in the formulation of foreign policy of selected Middle East countries including Israel and Egypt. Cultural, economic, psychological, as well as political components of policy making will be examined together with the role of legislative and executive institutions.
Prerequisite: POL 101
Spring, 3 credits

POL 211 American Foreign Policy

Survey of problems involved in formulation of United States foreign policy. Whenever appropriate the American system is compared with procedures in other countries. Components of policy are analyzed: conditions abroad, traditional policy, public opinion, and international law. Major constitutional provisions as they relate to foreign policy are reviewed. Executive and legislative institutions are studied from standpoints of role and personality, with emphasis given to contemporary situations.
Prerequisite: POL 101
Fall, 3 credits

POL 220 Law and Politics

The major institutional structures of the civil and criminal law systems in the United States: the adversary proceeding; the legal profession, the judiciary, juries, and patterns of fault and punishment. Each aspect will be placed in the setting of American politics, i.e., in the context of legislative, executive, party, and community behavior.
Prerequisite: POL 102
Fall, 3 credits

POL 238 Political Propaganda

Examination of devices used to manipulate political attitudes and beliefs in both print and visual media. Course topics include politics of the mass media, political satire, political rhetoric, psychology of persuasion, etc.

Alternate years, 3 credits (not offered in 1986-87)

POL 240 Political Analysis

An introduction to the nature of social science inquiry. Subjects covered will include the structure of scientific knowledge, concept formation, and strategies of theory construction and confirmation. Especially recommended for students considering advanced work in any of the social sciences.

Prerequisites: POL 104; satisfaction of mathematics proficiency requirement
Fall and spring, 3 credits

POL 250 Classical Political Theory:**Plato to Mill**

Plato, Aristotle, St. Thomas, Machiavelli, Hobbes, Locke, Montesquieu, Hume, Mill, and Rousseau are read and discussed to the end of discovering their relevance to the understanding of political behavior.

Prerequisite: Sophomore standing
Fall or spring, 3 credits

POL 260 Introduction to Public Policy

Discussion and analysis of the processes of agenda setting, formulation, implementation, and evaluation of public policies in selected issue areas, such as housing, land use, education, etc. The public policy-making processes of the United States will be compared with those of selected other countries.

Prerequisite: POL 102
Fall or spring, 3 credits

POL 261 Business Law

A study of the legal environment of business operations, covering such topics as the principle of contracts, commercial papers, partnerships, corporations, real property, estates, bankruptcy, anti-trust laws, and environmental and civil rights regulations.

Prerequisite: POL 102
Fall and spring, 3 credits

POL 305 British Parliamentary Democracy

Examination of the working of parliamentary democracy in Britain and in selected dominions with emphasis upon the nature of the societies in question and the relationship of society to the working of political institutions, ideologies, and governmental policies.

Prerequisites: POL 102 and 103; one other social science course
Fall or spring, 3 credits

POL 308 Politics of Conflict: The Middle East

The genesis and development of one of the most important international regional conflicts, the Arab-Israeli conflict. Issues of the conflict, role of external powers, and process of conflict resolution will be discussed.

Prerequisite: POL 101
Fall, 3 credits

POL 311 Introduction to International Law

Case book approach to standard introductory course in international law, including the following topics: state jurisdiction and responsibility, individuals, international organization, and use of force.

Prerequisite: POL 101
Fall and spring, 3 credits

POL 312 National Security Policy

Analysis of the strategy, structure, and processes of U.S. national security policy, including the political use of force, limited war, nuclear strategy, arms control, and selected regional security problems. Special attention will be directed to the decision-making process.

Prerequisite: POL 211 and 260
Spring, 3 credits

POL 313 Problems of International Relations

Analysis of the international system, its characteristic forms, and the principal forces making for conflict and adjustment. Examination of some prevalent analytical concepts, of major current problems and developments, and of prospects and alternatives for the future.

Prerequisite: POL 101
Fall, 3 credits

POL 317 American Election Campaigns

Various approaches to studying strategies of American election campaigns. Quantitative and formal approaches are complemented by case studies and other forms of qualitative evidence in pursuit of this goal. House Congressional campaigns are emphasized, but Presidential and other types of campaigns are also discussed.

Prerequisite: POL 104; POL 240 or 241 is recommended
Fall, 3 credits

POL 320 Constitutional Law and Politics: United States

A study of the role of the modern Supreme Court within the political and governmental process; its relation with Congress, the Presidency, state and local governments, parties, and interest groups; and the Court's contemporary policy-making role in several areas—economic regulation, representation, race relations, censorship, religion in government, and defendants' rights.

Prerequisite: POL 102
Fall and spring, 3 credits

POL 322 The Presidency in the American Political System

How presidential power developed historically; from what sources the powers of the modern presidency emanate; how decisions are made in the presidential institution; how and to what degree presidential power may or ought to be controlled.

Prerequisite: POL 102
Fall, 3 credits

POL 323 The Legislative Process

An examination of American legislative institutions—Congress, state governments, local legislatures—in light of recent research. How legislatures actually operate and how American legislatures contribute to the "democratic culture."

Prerequisite: POL 102
Fall and spring, 3 credits

POL 324 American Political Parties and Pressure Groups

An examination of political party organization, political leadership, finance, campaign techniques, and legal controls over parties; the functions and methods of pressure groups and their interaction with policy makers; the historical origins and development of the American party system; the significance of parties and pressure groups for democratic ideology and the problems of political leadership in a democracy.

Prerequisite: POL 102
Fall or spring, 3 credits

POL 325 Civil Liberties and Civil Rights

A systematic treatment of leading Supreme Court decisions in such areas as freedom of speech, press, and religion; the rights of criminal defendants; voting rights; and discrimination on grounds of race, sex, poverty, illegitimacy, and alienage.

Prerequisite: POL 320
Fall or spring, 3 credits

POL 326 Politics of New York State

Analysis of parties, pressure groups, and the political process in New York State. Particular attention paid to the legislative process in Albany.

Prerequisite: POL 102
Fall or spring, 3 credits

POL 327 Urban Politics

Emphasizes both the formal and informal political institutions and processes in American cities, including governmental structures, political parties, interest groups, and service systems. Special attention will be given to community "power structures."

political participation, and a comparative approach to the study of urban politics.

Prerequisite: POL 102

Fall or spring, 3 credits

POL 335 Contemporary African Problems

An investigation of the nature of African societies by studying the variety of African political, social, and traditional forms necessary to understanding developments in the 19th and 20th centuries. Emphasis will be upon some of the long-standing problems essential to understanding the diversity of ideas and people in the African scene. Crosslisted with AFS 335.

Prerequisites: Two AFS or POL courses

Fall, 3 credits

POL 337 Politics in Africa

A study of nationalism, political thought, and political institutions in Africa. Consideration is given to the quest for unity, the problems of liberation, and the political implications of social change. Crosslisted with AFS 337.

Prerequisites: Two AFS or POL courses

Spring, 3 credits

POL 339 Politics in France and Italy

Examination of the political process in France and Italy, focusing on selected topics of comparative interest rather than presenting separate in-depth studies of the two countries. Among these topics are the economic, social, and cultural bases of democracy; forms of parliamentary government; recent election campaigns; and eurocommunism.

Prerequisite: POL 103

Fall or spring, 3 credits

POL 343 Behavioral Assumptions of the Law

Evidence from social science research is used to examine some of the behavioral assumptions underlying the law and to assess their validity. The primary focus will be on those aspects of the criminal justice system where social psychological factors, although formally extraneous to the legal process, can and do consistently influence legal outcomes and decisions.

Prerequisite: PSY 102

Spring, 3 credits

POL 346 Political Psychology

Focus on the application of psychological concepts and measures to political behavior. Course topics include attitude measurement; stability and change; obedience to authority; learning theory; attention and problem

solving; personality correlates of political activity; and stress and aggression.

Prerequisite: POL 104

Fall or spring, 3 credits

POL 348 Political Beliefs and Judgments

Following a review of the literature on political attitudes, the course applies psychological concepts and experimental approaches to the study of the content and structure of political beliefs and judgments.

Prerequisite: POL 102 or 104

Fall, 3 credits

POL 349 Social Psychology of Politics

A survey of social psychological theory and research pertinent to political behavior. The course will look at how scientific psychology views socialization, attitude formation and change, conformity, power, decision-making in groups, and leadership. These topics are applied to such problems as politization, party identification, candidate preference, voting behavior, campaign strategies, and submission to political authority.

Prerequisite: POL 104

Fall or spring, 3 credits

POL 350 Contemporary Political Theory

An examination of how political theory has assimilated the advances and discoveries in the other social sciences, developments in the analysis of language, and reversals in Hegelianism and anarchism. Original writing from Mosca to Marcuse.

Fall or spring, 3 credits

POL 351 Political Theory and Public Policy

The relation between some central modern political concepts and some public policies. The course investigates such concepts as equality, perfectability of institutions, the moral-political system, and responsible government, as developed by thinkers from Rousseau to Mill. Case studies of five or six crucial policy developments (e.g., the war on poverty).

Prerequisite: POL 102

Fall or spring, 3 credits

POL 353 Utopian Politics

Inquiry into the attractions and consequences of comprehensive ideological solutions to the shortcomings of the political community. Students will read four or five utopian works and a few analyses which seek to explain and evaluate this approach to political life.

Fall or spring, 3 credits

POL 354 Problems of Marxism

The problems posed for Marxism by certain competing schools of political thought; by institutional and social developments in the West, in Russia, and in backward areas; and by deviationist tendencies as in China and Yugoslavia. Particular attention will be given

to the problems posed for social organization by (1) technology and its demands, (2) the ideal of high mass consumption, and (3) the concept of individual development.

Responses given to those problems by Marx, Lenin, Mill, Weber, and Dewey will be surveyed. The course will relate doctrines to institutions.

Alternate years, 3 credits (not offered in 1986-87)

POL 362 The Politics of Governmental Planning

An examination of the governmental planning process of all levels—federal, state, regional, and local—with emphasis on the theory and practice of "creative federalism" related to the process and the relationship between planning and general governmental decision making.

Prerequisite: POL 260

Alternate years, 3 credits (not offered in 1985-86)

POL 363 Policy and Administration of Natural Resources

Policy development in the resources area as influenced by the structure and pattern of political power on international, national, state, and local levels of government. Topics include the significance of technological innovation, value orientations, and economic welfare analysis in giving direction to policy planning.

Prerequisite: POL 260

Alternate years, 3 credits (not offered in 1986-87)

POL 364 Organizational Decision Making

Decision processes are examined in public and private organizations to understand common problems arising from limited decision-making capabilities, conflicts among organizational members, and uncertainty and ambiguity in the organization's environment. Several concepts are introduced to analyze normative and behavioral issues arising from the organizational context of political life.

Prerequisites: Upper-division standing;

POL 260 or ECO 251

Fall, alternate years, 3 credits (not offered in 1986-87)

POL 366 Government Regulation of Business

An examination of the scope of government regulation of business in the United States today—regulation at both the federal and state levels, regulation by both "economic" and "social" agencies. The course will also compare alternative explanations for regulatory agency failures as well as possible explanations for why some regulatory agencies perform better than others. Finally, the course will consider proposed reforms, such as clearer legislative standards, curbs on "revolving door" practices, greater citizen participation in agency proceedings, and deregulation.
Prerequisites: POL 102; one of the policy courses listed on p. 167.
Fall, 3 credits

POL 367 Mass Media in American Politics

Competing theories of the power of the press will be tested by examining the literature on mass media effects—on what the public thinks and what the public thinks about. Various explanations of why news organizations behave as they do will also be assessed. Conflicts between freedom of the press and such values as privacy, national security, and the right to fair trial will be discussed. The relationships between freedom of the press and the public's right to know will also be explored.
Fall, 3 credits

POL 368 Criminal Justice Policy

The formulation, implementation, and evaluation of policies to control violent crime, white-collar crime, drug abuse, etc., and their implications for justice. Police court and correctional decision making and policies such as gun control, capital punishment, and mandatory minimum sentencing will be addressed.
Prerequisite: POL 260
Fall, 3 credits

POL 370 Nuclear Proliferation: Technology and Politics

The proliferation of nuclear technology employable for both peaceful and military purposes, the threat it poses to world political and military stability, and the responses made by governments and international organizations. The topic requires an ability to read a diverse array of technical material for which students will need background in both physical and social sciences. Crosslisted with EST 370.
Prerequisites: Upper-division standing; permission of instructor
Spring, 3 credits

POL 401, 402 Seminars in Advanced Topics

Special projects and research papers on a topic of political interest, which will be announced before the start of the term.
Prerequisite: Permission of instructor
Schedule to be announced, 3 credits each semester

POL 447 Directed Readings in Political Science

Individually supervised reading in selected topics of the discipline. May be repeated, but total credit may not exceed six credits.
Prerequisites: Political science major; 15 credits in political science; permission of instructor and department
Fall and spring, 1 to 3 credits

POL 475 Undergraduate Teaching Practicum

Each student will conduct a periodic recitation that will supplement a lecture course. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion and helping students with research papers. Satisfactory/Unsatisfactory grading only.
Prerequisites: Political science major; senior standing; interview; permission of instructor
Fall and spring, 3 credits

POL 487 Directed Research

Qualified advanced undergraduates in political science may carry out individual research projects under the direct supervision of a faculty member. May be repeated but total credit may not exceed six credits.
Prerequisites: Political science major; 15 credits in political science; permission of instructor and department
Fall and spring, 1 to 3 credits

POL 488 Internship

Participation in a local, state, or federal governmental agency or community organization. Students will be required to submit progress reports to their department sponsor and a final report on their experience to the department faculty. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.
Prerequisites: Political science major with 3.0 G.P.A.; 15 credits in political science; permission of instructor, department, and Office of Undergraduate Studies
Fall and spring, 3 to 12 credits

POL 489 Washington Internship

Designed so that students can participate in the Washington Center for Learning Alternatives (W.C.L.A.) as interns in private or public sector organizations and agencies. Students will be supervised by selected practitioners within the organization or agency. Students will be required to submit journals of experience and observation which, together with the supervisors' report, become the basis for a Satisfactory/Unsatisfactory grade. Only three credits for this course may be applied toward major requirements. Crosslisted with SSI 489.
Prerequisites: Admission to W.C.L.A.; political science major with 3.0 G.P.A.; 15 credits in political science; sponsorship of a political science faculty member
Corequisite: POL 490
Fall and spring, 12 credits

POL 490 Washington Seminar

Seminar offered in Washington as part of the internship program of the Washington Center for Learning Alternatives (W.C.L.A.). The seminars are taught by people with experience in public and private agencies, public policy formulation, and relevant academic and professional experience. Students are offered work in several program areas designed to complement their internships, such as law and justice, congressional studies, policy studies, community-urban service, and studies in government. Crosslisted with SSI 490.
Prerequisites: Admission to W.C.L.A.; political science major with 3.0 G.P.A.; 15 credits in political science; sponsorship of a political science faculty member
Corequisite: POL 489
Fall and spring, 3 credits

Department of Psychology

Professors

Beverly Birns, Ph.D., Columbia University: Child development; psychology of women.

Dana Bramel, Ph.D., Stanford University: Interpersonal perception; social psychology.

David Cohen, Ph.D., University of California, Berkeley: Cellular mechanisms of conditioning; neural control of the heart.

John H. Gagnon, Ph.D., University of Chicago: Sexual behavior; marriage and the family; social change; deviance.

David C. Glass, Ph.D., New York University: Behavior patterns; stress and coronary disease.

Marvin R. Goldfried, Ph.D., State University of New York at Buffalo: Behavioral assessment; cognitive behavior therapy.

Richard Green, M.D., The Johns Hopkins University: Human sexuality; gender identity.

Marcia K. Johnson, Ph.D., University of California, Berkeley: Human learning and memory.

Harry I. Kalish, Emeritus, Ph.D., University of Iowa: Applied learning; biofeedback; animal learning.

Leonard Krasner, Ph.D., Columbia University: Behavior modification; environmental design.

Marvin Levine, Director of Undergraduate Studies, Ph.D., University of Wisconsin: Human learning with emphasis on cognitive functions.

Robert Liebert, Ph.D., Stanford University: Observational learning; laboratory methodology; statistics.

Jan Loney, Ph.D., University of Illinois: Childhood behavior disorders.

Emil Menzel, Ph.D., Vanderbilt University: Primate behavior; social behavior.

John Neale, Ph.D., Vanderbilt University: Behavior deviations; schizophrenia.

K. Daniel O'Leary, Ph.D., University of Illinois: Marital discord; hyperactivity in children.

Howard C. Rachlin, Ph.D., Harvard University: Punishment; avoidance; choice; self-control.

Alan O. Ross, Ph.D., Yale University: Psychological disorders of children; learning disabilities.

John Stamm, Chairperson, Ph.D., University of Southern California: Experimental neuropsychology; higher cortical functions in monkeys and humans.

Stuart Valins, Ph.D., Columbia University: Group dynamics; environmental psychology.

Grover J. Whitehurst, Ph.D., University of Illinois: Basic learning processes; operant learning.

Everett J. Wyers, Ph.D., University of California, Berkeley: Comparative and physiological psychology; memory consolidation.

Associate Professors

Edward G. Carr, Ph.D., University of California, San Diego: Behavior modification; learning disabilities.

David Cross, Ph.D., University of Michigan: Psychophysics; mathematical models.

Thomas J. D'Zurilla, Ph.D., University of Illinois: Behavior modification; social problem solving.

David Emmerich, Ph.D., Indiana University: Sensory processing; perception.

Richard Friedman, Ph.D., State University of New York at Stony Brook: Psychophysiological disorders; behavioral medicine.

Ronald J. Friend, Ph.D., University of Toronto: Social psychology; social change.

Dale Hay, Ph.D., University of North Carolina: Social development.

Herbert Kaye, Ph.D., Brown University: Developmental; learning disabilities.

Fredric Levine, Ph.D., Northwestern University: Behavior modification; motivation; schizophrenia.

Alexandra Logue, Ph.D., Harvard University: Choice; self-control; food preferences and aversions; history of psychology.

H. William Morrison, Director of Graduate Studies, Ph.D., University of Michigan: Perception of abstract relations; instructional techniques.

Susan O'Leary, part-time, Ph.D., State University of New York at Stony Brook: Child and family problems; hyperactivity in children.

David M. Pomeranz, Ph.D., University of Rochester: Environmental psychology; behavior modification.

Sally Springer, Ph.D., Stanford University: Cognitive psychology; sensory processes; psycholinguistics.

Everett Waters, Ph.D., University of Minnesota: Social and personality development.

Harriet Waters, Ph.D., University of Minnesota: Memory and cognitive development.

Sheldon Weintraub, Adjunct, Ph.D., University of Minnesota: Children at high risk.

Assistant Professors

R. Lorraine Collins, Ph.D., Rutgers University, New Brunswick: Cognitive and behavioral approaches to the conceptualization and treatment of addictive behaviors.

Ernest F. Dube, Ph.D., Cornell University: Cognition; cross-cultural comparisons.

Ronald Finke, Ph.D., Massachusetts Institute of Technology: Cognition; imagery.

Richard S. Newman, Ph.D., University of Michigan: Children's mathematical skills; memory development.

Mary Peterson, Ph.D., Columbia University: Attention and perception; mental structures.

Heywood M. Petry, Ph.D., Brown University: Neural mechanisms of vision.

Nancy Squires, Ph.D., University of California, San Diego: Processing sensory information.

Arthur A. Stone, Ph.D., State University of New York at Stony Brook: Stress and coping; depression; behavioral medicine.

Gerdi Weidner, Ph.D., Kansas State University: Health psychology; personality.

Joanne V. Wood, Ph.D., University of California, Los Angeles: Health psychology; social cognition.

Teaching Assistants

Estimated number: 44

Physical Facilities

The Psychology Department has several laboratories used exclusively for undergraduate instruction. A number of the department's research facilities are also exclusively for undergraduates. In addition, laboratories maintained by individual faculty members can be used by undergraduates working with them. These include research facilities on campus for the study of operant

conditioning, information processing, memory and perception, animal behavior, psychophysiology, and small group behavior. Certain off-campus facilities are available for qualified undergraduates. Several child development facilities on campus that are available to the community at large also provide opportunities for undergraduate participation. For example, the *Point of Woods University Laboratory School* is a school for children with hyperkinesis and conduct disorders; the *Suffolk Developmental Center* is a University facility for autistic children; and the Psychology Department *Preschool* is a nursery school for pre-kindergartners. Support facilities for the laboratories include a PDP-8I computer, several microcomputers, an electronics workshop, and a machine shop.

Programs in Psychology

The Department of Psychology offers undergraduate majors leading to either a Bachelor of Arts or Bachelor of Science degree. Both programs provide a similar broad overview of psychology, and both require extensive exposure to areas other than psychology as context for study in the major. The two programs differ primarily in the content of the outside requirements. Thus, the B.A. program emphasizes related study in the social sciences or humanities, whereas the B.S. program concentrates on the natural sciences and mathematics. Both programs provide equally good preparation for graduate school, given that students do well in their coursework both within and outside the major.

The undergraduate office in psychology is open daily to assist students interested in psychology, to advise psychology majors, and to provide information about programs, courses, colloquia, and other events in the department.

Requirements for the Majors in Psychology

All courses required for either the B.S. or the B.A. degree must be taken for a letter grade.

A. Study within Psychology
33-35 credits in psychology to be distributed as follows for both degree programs:

- | | <i>Credits</i> |
|--|----------------|
| 1. Core Program: | |
| PSY 103 Introduction to Psychology | 3 |
| PSY 201 Statistical Methods in Psychology or another approved statistics course | 3 |
| PSY 300 Research Methodology | 3 |
| PSY 303 Research Methodology Laboratory | 4 |
| 2. Distribution Requirements within Psychology:
Two courses from each group (a and b below): | |
| a. PSY 208 Theories of Personality | |
| PSY 209 Social Psychology | |
| PSY 211 Developmental Psychology | |
| PSY 215 Abnormal Psychology | 6 |
| b. PSY 241 Introduction to the Nervous System | |
| PSY 244 Comparative Psychology | |
| PSY 318 Animal Learning | |
| PSY 319 Human Learning or | |
| PSY 348 Human Memory or | |
| PSY 350 Cognitive Psychology | |
| PSY 321 Sensation-Perception | 6 |
| 3. Three additional courses of which two must be upper division. PSY 273, 283, 399, 447, 475, 476, 487, 488, and 495-496 may not be used | 9 |
| a. For the B.A. student the upper-division courses may include only one seminar; | |
| b. For the B.S. student one of the upper-division courses must be PSY 322 or 372. | |

The department strongly recommends that students, especially those planning to attend graduate school, take one of the advanced laboratory courses, PSY 304-307.

B. Courses outside the Psychology Department

For the B.A. Student:

- | | <i>Credits</i> |
|--|----------------|
| 1. Mathematics: One course from among the following: AMS 101, CSE 105, MAT 111 and 112 (6 credits, counts as one), MAT 120, or any higher AMS, CSE or MAT course, except AMS 102 | 3 |
| 2. Biology: Any one-semester BIO course | 3 |
| 3. Philosophy: Any one-semester PHI course | 3 |
| 4. Social Sciences: Any one-semester SOC, ANT, or POL course | 3 |
| 5. One of the following special four- or five-course options (exclusive of the above requirements—see the Psychology Department for the specific acceptable courses) | 12-15 |
| a. Africana Studies | |
| b. Anthropology/Sociology | |
| c. Biology | |
| d. Computer Science | |
| e. Economics | |
| f. History of Science | |
| g. Linguistics | |
| h. Mathematical Sciences | |
| i. Political Science | |
| The following may be substituted for the required option (see the Psychology Department for details): | |
| aa. Certain minor programs | |
| bb. A second major | |
| cc. Completion of the master's program in urban and policy sciences | |
| dd. Student-designed options if approved by the departmental undergraduate committee | |
| Total for the B.A. | 58-61 |

For the B.S. Student:

1. Mathematics: MAT 131, 132 (or MAT 141, 142 or 125, 126, 127) 8-9
2. Biology: BIO 151, 152 8
3. Other sciences: Two of the following groups of courses: 12-17
 - a. Biology: Two BIO or biology-related courses from among the following: BIO 229 and 231*, 230 and 232 or 335*, 321, 322, 339, 341, 343, 344, 351 and 352*, 380, or HBM 320 and 321*. This requirement may also be fulfilled by substituting CHE 321, 322 (or CHE 331, 332) and 327 (or CHE 333, 334).
 - b. Chemistry: CHE 131, 132, and 133, 134 (or CHE 141, 142, and 143, 144).
 - c. Mathematics: Two courses from among the following list: Any 200- or 300-level MAT courses except MAT 220 and 300; any 300-level AMS courses except AMS 310, 311, and 312
 - d. Physics: PHY 101, 102 or 103, 104 or 117, 118
 - e. Computer Science: CSE 113, 114, and 120 or 201.

Total for the B.S. 62-68

Note: No more than six credits from among PSY 273, 283, 447, and 487 may be taken in one semester. See also "Course Credit and Prerequisites," p. 55, for further limits on directed readings and research courses, and "Undergraduate Teaching Assistantships," p. 55.

Transfer students must take at least nine credits of psychology in residence at Stony Brook.

Honors Program in Psychology

Students apply for admission to the Psychology Honors Program in the fall of their junior year. Minimum academic

requirements include a 3.0 grade point average overall and a 3.5 grade point average in psychology courses. At the time of application, students must have completed PSY 103 or 104 A Survey of Psychology, PSY 201 Statistical Methods in Psychology (or approved substitute), and one course from the psychology distribution requirements (either a or b). The department will announce the procedures and deadline for application early in the fall semester.

The program is followed for three semesters. During the spring of their junior year, students enroll in a three-credit Honors Seminar (PSY 399) designed to review research topics currently studied by the psychology faculty. In their senior year, students register for three to six credits of PSY 495 (and 496), while they work on an honors thesis. The honors project is proposed to a departmental honors committee after consultation with an appropriate faculty advisor. The thesis will be judged by three faculty members, one of whom will be from outside the department. Favorable judgment of the thesis and continued high academic performance will provide the basis for conferring honors in psychology.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

PSY 103 A Survey of Psychology

An introduction to research and theory in psychology in such areas as learning, perception, cognition, psychobiology, development, personality, and abnormal and social psychology. As part of the course students must participate in experiments and/or a library research project. May not be taken for credit in addition to the discontinued PSY 101 or 102.

Fall and spring, 3 credits

PSY 104 Survey of Psychology: Honors

An enriched introduction to research and theory in psychology, requiring extensive reading and writing as well as coverage of topics more difficult than normally covered in PSY 103. Because class size is small, the course will provide students with an

opportunity for close interaction with the instructor and with classmates. As part of the course students must participate in experiments and/or a library research project. May not be taken for credit in addition to PSY 103 or the discontinued PSY 101 or 102.

Prerequisites: Permission of department; priority given to Scholar Incentives students; "Strong" on English Placement Examination; satisfaction of College mathematics proficiency requirement
Fall, 3 credits

PSY 201 Statistical Methods in Psychology

The use and interpretation of elementary statistical techniques in research, emphasizing descriptive statistics, correlational analysis, and inferential statistics, including chi-square, critical ratio, *t*, *F*, and certain selected nonparametric techniques. May not be taken for credit in addition to AMS 102.

Prerequisites: PSY 103 or 104; satisfaction of College mathematics proficiency requirement
Fall and spring, 3 credits

PSY 208 Theories of Personality

Contemporary theories of personality with emphasis on the experimental literature pertaining to personality development and current methods of personality assessment in the applied areas.

Prerequisite: PSY 103 or 104
Fall and spring, 3 credits

PSY 209 Social Psychology

A presentation of various topics in social psychology including interpersonal processes, obedience to authority, social perception, attitude change, attraction and liking, aggression and violence, and social change. These topics will be discussed in the context of American social structure.

Prerequisite: PSY 103 or 104
Fall and spring, 3 credits

PSY 211 Developmental Psychology

A study of the growth processes from fetal development to late childhood. Perceptual and learning characteristics are explained as they relate to increases in cognitive and social competence in the total community. Biological factors are examined as they relate to inheritance of behavior patterns.

Prerequisite: PSY 103 or 104
Fall and spring, 3 credits

PSY 215 Abnormal Psychology

Psychopathology, including the neuroses and functional and organic psychoses, will be examined. Analysis of current research in psychopathology and its relationship to the theories of abnormal behavior.

Prerequisite: PSY 103 or 104
Fall and spring, 3 credits

*Counts as one course.

PSY 241 Brain and Behavior

Introduction to the neural basis of sensory processes, motor control, attention, emotion, learning, cognition, language, and consciousness.

Prerequisite: PSY 103 or 104 or BIO 101 or 151

Fall, 3 credits

PSY 244 Comparative Psychology

The study of behavior and mental processes in evolutionary perspective.

Prerequisites: PSY 103 or 104; BIO 101 or 151

Fall or spring, 3 credits

PSY 273 Supervised Research in Psychology

Initial training and participation in techniques or duties related to a specific laboratory or field research experience under the direct supervision of a faculty member or advanced graduate student in the Department of Psychology. Students who wish to seek information about the opportunities available may do so through the Undergraduate Office of the Department of Psychology.

Satisfactory/Unsatisfactory grading only. Students may take two sections in a single semester, but no more than three credits may be applied to a section. May not be taken for more than six credits per faculty advisor during the student's career.

Prerequisite: Permission of instructor

Fall and spring, 1 to 6 credits

PSY 283 Applications and Community Service

Designed to provide opportunities for students to study and apply psychological principles outside the classroom (e.g., in settings such as hospitals and schools). Specific programs will vary from semester to semester. General information is available in the Undergraduate Office in the Psychology Department. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of six credits. May not be counted toward the distribution requirement in the social and behavioral sciences.

Prerequisite: Permission of instructor

Fall and spring, 1 to 3 credits

PSY 300 Research Methodology

Basic principles in the design and execution of research in psychology.

Prerequisite: PSY 201 or AMS 102

Fall and spring, 3 credits

PSY 303 Research Methodology Laboratory

Designed to provide an introduction to basic techniques in research through laboratory experience.

Prerequisites: PSY 300; satisfaction of University writing requirement

Fall and spring, 4 credits

PSY 304 Laboratory in Social Psychology

Techniques and experimental problems in social psychology, including natural observation, surveys, and experimental design.

Prerequisites: PSY 303; permission of instructor

Fall or spring, 4 credits

PSY 305 Laboratory in Perception

Techniques and experimental problems in perception and sensation on the visual, auditory, and tactile modalities. Topics may include detection, recognition, illusions, selective attention, and set effects.

Prerequisites: PSY 303; permission of instructor

Fall or spring, 4 credits

PSY 306 Laboratory in Learning and Performance

Experimental analysis of human performance. Topics include learning, cognitive processes, and motor skills.

Prerequisites: PSY 303; permission of instructor

Fall or spring, 4 credits

PSY 307 Laboratory in Comparative and Physiological Psychology

Techniques and experimental problems in the comparative and physiological bases of behavior including sensation, perception, motivation, learning, social interaction, and evolution of behavior.

Prerequisites: PSY 303; permission of instructor

Fall or spring, 4 credits

PSY 309 Psychology of Work

A presentation of psychological research and applications in industry as well as in other organizations. Topics include theories of work motivation, productivity, and job satisfaction; work, stress, and mental health; unionization, conflict, and discrimination; psychological consequences of unemployment; psychology of advertising; issues in personnel selection; group processes; worker-management relationships; international perspectives on democracy and authority in the workplace.

Prerequisites: PSY 208 or 209 or SOC 380

Spring, 3 credits

PSY 310 Studies of Social Conflict

Students will formulate and carry out team research projects focusing on issues involving conflict within the University or in the surrounding communities.

Prerequisites: PSY 103 or 104; PSY 201 or AMS 102; permission of instructor

Fall, 3 credits

PSY 311 Topics in Advanced Developmental Psychology

Selected topics in child development: (1) social development, (2) cognitive development, (3) children's learning, (4) the biological basis of development, and (5) infancy. One of these five topics will be explored in depth in a given semester, with another topic offered the following semester. The topic for a given semester will be announced at the time of preregistration. May be repeated once.

Prerequisite: PSY 211

Fall and spring, 3 credits

PSY 312 Behavior Deviation in Children

Development and modification of behavioral deviations in children; application of principles derived from experimental analysis of behavior to problems of children.

Prerequisite: PSY 211

Fall and spring, 3 credits

PSY 313 Organizational Behavior Management

A survey of the applications of behavior modification principles to the study and modification of problem behaviors within organizational settings. Coverage will include theoretical issues, ethical concerns, program evaluation methodology, and specific applications.

Prerequisites: PSY 208 or 209 or 211 or 215

Spring, 3 credits

PSY 315 Behavior Modification

Philosophical and experimental foundations of behavior modification. Not designed for specific training in clinical techniques, but issues related to clinical application will be considered.

Prerequisite: PSY 215

Fall and spring, 3 credits

PSY 317 Behavior Influence and Planned Environments

The concept of planned environments as illustrated by research and application of behavior modification, environmental psychology, and open education.

Prerequisites: PSY 215

Fall, 3 credits

PSY 318 Animal Learning

Principles of adaptation and behavioral change with emphasis on techniques of reward and punishment and of stimulus control.

Prerequisite: PSY 201 or AMS 102

Fall and spring, 3 credits

PSY 319 Human Learning

Basic concepts, empirical findings, and theoretical interpretation in the study of learning, knowing, remembering, and problem solving. May not be taken for credit in addition to PSY 348 or 350.

Prerequisite: PSY 201 or AMS 102

Fall and spring, 3 credits

PSY 321 Sensation-Perception

Phenomena of sensation and perception and the methods by which they may be studied. Different theoretical frameworks will be considered.

Prerequisite: PSY 201 or AMS 102

Fall and spring, 3 credits

PSY 322 Advanced Statistics

Survey of probability and sampling theory, descriptive and inferential statistics, and introduction to experimental design.

Prerequisite: PSY 201 or AMS 102

Fall or spring, 3 credits

PSY 325 Psychosocial Development of College Students

An examination of theories of college student development and their relationship to the special problems of resident students. Relevant psychological data will be applied to the solution of these problems. This course is designed primarily for resident assistants (R.A.s).

Prerequisites: PSY 103 or 104; PSY 209 or 211 or SOC 243 or 247; permission of instructor

Fall and spring, 3 credits

PSY 330 The Psychology of Eating and Drinking

This course will survey theories of eating and drinking as well as cover various methods of treating drinking and eating disorders. Material from many areas of psychology will be included, for example, learning and motivation, physiological psychology, sensation and perception, and personality.

Prerequisites: PSY 103 or 104; a 200-level psychology course (except 273 or 283); one semester of biology

Fall or spring, 3 credits

PSY 340 Physiological Psychology

An in-depth coverage of the experimental literature concerning the neural basis of behavior. Topics include neuroanatomy, cellular neurophysiology, motor control, sensory processing, homeostatic processes, learning, memory, and the neural basis of pain and pleasure.

Prerequisite: PSY 241

Spring, 3 credits

PSY 342 Human Brain Function

The functional organization of the human brain, including dysfunctions resulting from various types of brain pathology.

Neuroanatomical, neuropsychological, neurophysiological, and experimental psychological approaches will be described.

Prerequisite: PSY 241

Spring, 3 credits

PSY 344 Animal Social Behavior

Principles of sociality, social development, communication, and group organization.

Prerequisite: PSY 244 or BIO 332

Fall or spring, 3 credits

PSY 345 The Neuropsychology of Developmental Disabilities

Psychological dysfunctions in childhood disorders such as autism, mental retardation, reading disabilities, and hyperkinesis. The course considers anatomical, physiological, and developmental characteristics of the human brain, and specific deficits in such processes as attention, perception, memory, and language.

Prerequisite: PSY 340 or 342

Fall, 3 credits

PSY 348 Human Memory

Survey of recent theory and current research on the nature of human memory including iconic, short- and long-term memory, the nature of imagery, rehearsal, mnemonic strategies. May not be taken for credit in addition to PSY 319 or 350.

Prerequisite: PSY 300

Fall or spring, 3 credits

PSY 350 Cognitive Psychology

An examination of theoretical and empirical work on human cognition including pattern recognition, memory, attention, language comprehension, decision making, and problem solving. May not be taken for credit in addition to PSY 319 or 348.

Prerequisite: PSY 303

Fall or spring, 3 credits

PSY 352 History and Systems of Psychology

History of psychology presented either as a development and testing of theories that emerge from a long philosophical tradition, or as a set of practices that serve particular social functions and respond to pressures from the socioeconomic context.

Prerequisite: Nine credits of psychology

Spring, 3 credits

PSY 354 Systematic Viewpoints in Psychology

A study in depth of the theories and research of a single important psychologist or school of psychology. May be repeated with permission of the instructor.

Prerequisite: PSY 103 or 104

Schedule to be announced, 3 credits

PSY 370 The Psychology of Language

Examination of language acquisition and a consideration of its implication for cognitive psychology.

Prerequisite: PSY 319

Fall or spring, 3 credits

PSY 372 Tests and Measurements in Personality

A study of principles of psychological assessment of personality with emphasis on theory and practice and principles of measurement theory and correlational techniques. Students will have the opportunity to develop a personality test and put these principles and techniques into practice.

Prerequisites: PSY 201 or AMS 102;

permission of instructor

Fall or spring, 3 credits

PSY 390-398 Special Topics in Psychology

Lecture courses on current topics in psychology, which will be announced and described before the start of each term. May be repeated for different topics.

Prerequisites: PSY 103 or 104; at least one other course specified when the topic is announced

Schedule to be announced, 3 credits

PSY 399 Contemporary Topics in Psychology

Research topics and issues currently under investigation by members of the department will be reviewed. Each week a different faculty member will assign readings and will lecture on the theories, problems, and methods related to his or her research.

Prerequisite: Admission to Psychology Honors Program

Spring, 3 credits

PSY 447 Readings in Psychology

Directed readings under the guidance of a faculty member. May be repeated.

Prerequisite: Permission of department

Fall and spring, 1 to 6 credits

PSY 475 Undergraduate Teaching Practicum I

Each student will conduct a weekly recitation or laboratory section that will supplement a lecture course. The student will receive regularly scheduled supervision from a faculty member. Responsibilities may include preparing material for discussion and helping students with research papers. Satisfactory/Unsatisfactory grading only. May not be repeated.

Prerequisites: Senior psychology major; permission of instructor and department

Fall and spring, 3 credits

PSY 476 Undergraduate Teaching Practicum II

The continuation on a more advanced level of training in the techniques of organization and management in the teaching of psychology courses. Students will be expected to assume greater responsibility in such areas as leading discussions, analyzing and evaluating test results and papers, observing teaching methods, and assisting students and other teaching assistants to develop new teaching techniques. It is expected that the course in which a student is permitted to work as a teaching assistant will be of at least equal difficulty as the course in which he or she previously served; it will not be the same course.

Satisfactory/Unsatisfactory grading only.

Prerequisites: PSY 475; permission of instructor and department
Fall and spring, 3 credits

PSY 487 Independent Research in Psychology

Upper-division students interested in carrying out independent research projects under the

auspices of a faculty member in the Department of Psychology may do so under this course. The student must propose and carry out the research project and must analyze and write up the results in a form acceptable to the sponsor. Written agreement by the faculty sponsor to undertake this responsibility and an outline of the project goals are filed with the Undergraduate Office in Psychology. These become a formal part of the student's departmental file. May be repeated up to a limit of 12 credits.

Prerequisite: Permission of department
Fall and spring, 3 to 6 credits

PSY 488 Internship

Participation in public and private agencies and organizations. Students will be required to submit written progress reports and a final written report on their experience to the faculty sponsor and the department.

Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.

Prerequisites: 12 credits in psychology; permission of instructor, Director of Undergraduate Studies, and Office of Undergraduate Studies

Corequisite: PSY 447 or 491 or 492
Fall and spring, 3 to 12 credits

PSY 491, 492 Advanced Seminars in Psychology

Special seminars covering current research and theory. Topics will be announced prior to the beginning of each semester. May be repeated up to a limit of 18 credits. Students may take two sections in a single semester. May not be taken for more than six credits per faculty member during the student's career.

Prerequisites: PSY 303; written permission of instructor

Fall (491) and spring (492), 3 credits each semester.

PSY 495-496 Senior Honors Thesis in Psychology

A two-semester research project for seniors in the Honors Program. The student will design, execute, analyze, and write up a study under the supervision of an appropriate instructor.

Prerequisite: PSY 399

Fall and spring, 3 to 6 credits each semester

Program in Religious Studies

Professors

Thomas J.J. Altizer, Ph.D., University of Chicago: Religion and literature; theology.

Patrick A. Heelan, Ph.D., University of Louvain; Ph.D., St. Louis University: Science and religion.

Robert C. Neville, Joint with Philosophy, Ph.D., Yale University: Philosophical theology; philosophy of religion; value theory and ethics. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974-75.

Associate Professors

Christopher S. George, Adjunct, Ph.D., University of Pennsylvania: Indic and Tibetan studies.

Robert Goldenberg, Director, Ph.D., Brown University: Jewish thought; history of Judaism; Talmudic literature.

Peter B. Manchester, Director of Undergraduate Studies, Ph.D., Graduate Theological Union: Christian origins; philosophical theology.

Sung-bae Park, Ph.D., University of California, Berkeley: Buddhist studies; Indian, Chinese, Japanese, and Korean religious thought.

Assistant Professors

William Chittick, Ph.D., University of Teheran: Islamic studies, Sufism; comparative mysticism.

Sachiko Murata, Ph.D., University of Teheran: Islamic law; Japanese religions; feminine spirituality.

Lecturers

Christopher Chapple, Adjunct, Ph.D., Fordham University: Sanskrit; religions and philosophies of South Asia.

Janet Gyatso, Adjunct, Ph.D., University of California, Berkeley: Buddhist studies; Tibetan Buddhism.

analysis of religion in its many forms and aspects. To the variety of religious traditions, both living and historical, it brings the techniques and questions of philosophy, history, literature, and the human sciences. Designed for flexibility in meeting student interests and needs, the program offers a major, a minor, an honors program, and a variety of strong electives useful for broadening one's knowledge of religious phenomena, for supplementing the major program in many related fields of humanities and social science, and for meeting humanities distribution requirements. Further information and advising in regard to any of the program's services are available through the program office.

Requirements for the Major in Religious Studies

The major in religious studies leads to the Bachelor of Arts degree. It requires ten courses (30 credits), all to be taken for a letter grade, distributed as follows:

The program in religious studies offers an interdisciplinary approach to the

	<i>Credits</i>
I. RLS 301 (ordinarily taken in the fall of the junior year; may be taken in senior year by those who do not meet the prerequisites as juniors) and RLS 400.	6
II. Depth requirement: Four courses at the 200, 300, and 400 levels in one of the following areas of emphasis:	
A. Buddhism	
B. East Asian religions (Chinese, Japanese, and Korean religions)	
C. Christianity (to include at least one Judaic studies course; JDH/RLS 230 or JDS/HIS 225, 226 recommended)	
D. Judaism (in coordination with Judaic studies; ordinarily all four courses in this area emphasis will be JDS and JDH, but one may be replaced with a relevant RLS or other course with advisor's approval)	
E. Theology, philosophy, and method in religion	
F. Other areas, as available; these must be approved by the Program Director before the first semester of the senior year.	12
III. Breadth requirement: Four RLS courses in areas outside the area emphasis.	12
	Total 30

Note: The planning of a sound and coherent curriculum is an important dimension of the religious studies major. Academic advising is available for all majors through the program office and the Director of Undergraduate Studies; by their junior year all majors will have an assigned advisor who should be consulted at each registration period. Final approval of courses selected for major requirements should be obtained prior to registration for the senior year. Requirements for the major may be satisfied with RLS courses and, with advisor's approval, with courses from other departments listed below. Students wishing to satisfy the requirements with yet other courses may do so with the approval of the Program Director.

Related Courses in Other Departments

Detailed course descriptions appear under appropriate departmental listings and should be examined there.

ANT 360	Ancient Mesopotamia
ARH 207	Art of the Ancient Near East
ARH 303	The Art and Architecture of the Early Middle Ages, ca. 400-1050
ARH 304	The Art and Architecture of the High and Late Middle Ages, ca. 1050-1400
ARH 315	Buddhist Art
ARH 329	Primitive Art
EGL 261, 262	The Bible as Literature
EGL 342	Milton
HIS 233	Medieval History, 300-1100
HIS 234	The High Middle Ages, 1100-1400
HIS 235	Humanism and Renaissance
HIS 236	The Age of the Reformation
HIS/JDS 356	Zionism
JDH 298	Midrash in Translation
JDS/HIS 225, 226	Civilization of Israel I, II
JDH 447	Readings in Judaic Studies
PHI 111	Introduction to Eastern Philosophy: Classical Texts
PHI 112	Introduction to Eastern Philosophy: Interpretations
PHI 239	Japanese Philosophy and Aesthetics
PHI 268	Philosophy of Myth and Religion
PHI 304	Medieval Philosophy
PHI 340	Indian Buddhism: Its Essence and Development
PHI 342	Chinese and Japanese Buddhism
PHI 415	The Philosophical Methodology of the Rig Veda
SOC 264	Introduction to Middle Eastern Society
SOC 352	Sociology of Religion

Appropriate special topics from these or other departments may also be offered to fulfill major requirements with permission of the Program Director.

The Honors Program in Religious Studies

Religious studies majors who have maintained a grade point average of 3.5 in the major and 3.0 overall through their junior year may be invited to attempt the degree in religious studies with honors.

The honors major requires a total of 36 credits, consisting of the 30 credits required for the major, and six additional credits in a special research project pursued through both semesters of the senior year under the supervision of a member of the faculty (RLS 495-496).

When the supervising faculty member judges the student ready, an honors essay based on this special project is presented and defended at a meeting of the Religious Studies Seminar, which consists of the religious studies faculty and participating faculty from related disciplines. Thereafter, the religious studies faculty, together with at least one faculty member from another discipline who attended the seminar, will meet to decide whether to recommend conferring the degree with honors. The decision will be based on the student's overall record, the recommendation of the special project supervisor, the student's performance in presenting the honors essay, and the judgment of the faculty concerning its intrinsic worth.

Students who believe they are qualified to become candidates for honors should consult with the Director of Undergraduate Studies during their junior year. Faculty supervision of the senior honors project must be agreed upon and arranged before the end of the junior year.

The Minor in Religious Studies

The minor in religious studies consists of six courses (18 credits), at least three of which (9 credits) are at the upper-division level. At least 12 credits, including RLS 301, must be taken for a letter grade.

In addition to these general requirements, the program is designed to ensure (a) an encounter with the variety of world religions, (b) a grasp of problems of method and the critical use

of sources in the study of religion, and (c) sufficient depth in a single area emphasis to read advanced work in the area with experience and judgment. Requirements to meet these goals are:

	Credits
I. RLS 101 or RLS 150 A 200-level RLS course	6
II. RLS 301	3
III. At least three courses in one of the area emphases listed for the major	9
Total	18

Students desiring to minor in religious studies should consult with the Director of Undergraduate Studies by the semester in which they register for RLS 301 for academic advising on coordinating the religious studies minor with the student's major program. Final approval of courses selected to meet the minor requirements should be obtained prior to registration for the senior year.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

SKT 111, 112 Elementary Sanskrit I, II

An introduction to Sanskrit, the classical language of Indian religion and philosophy, including grammar, translation, and readings from selected texts of Hinduism and Buddhism.

Fall (111) and spring (112), 3 credits each semester

RLS 101 Great Religions of the Contemporary World

An introduction to the history, doctrine, and religious practices of Hinduism, Judaism, Buddhism, Confucianism, Taoism, Christianity, and Islam.

Fall and spring, 3 credits

RLS 122 Religion and Ethics Today

An introduction to the role of religion in the formation of moral, social, and political values, through a study in depth of selected contemporary areas of religious concern such as political economy, medicine, human rights, science and technology, war and peace.

Fall or spring, 3 credits

RLS 150 The Religious Dimension: Honors

An introduction to the nature and experience of religion as a universal dimension of human reality. Drawing from religion in all its worldwide variety, the course considers continuities between religion in the simplest and most complex civilizations, the relation between personal religious engagement and the social and public aspect of religion, the expressive power of ritual and myth, and religious understandings of human responsibility for the future.

Prerequisite: Permission of program; priority given to Scholar Incentives students
Fall or spring, 3 credits

RLS 195, 196 T'ai Chi Ch'uan

A study of the philosophy and practice of T'ai Chi Ch'uan, the ancient Taoist exercise. Of the 108 movement forms, approximately the first half will be learned in RLS 195, the second half in RLS 196.

Prerequisite to RLS 196: RLS 195
Fall (195) and spring (196), 1 credit each semester

RLS 220 Studies in Religion

This is a lower-division study within the area of expertise of distinguished visiting faculty. The topic of the course varies from semester to semester. Students should consult the description of course offerings available from the religious studies office. The course may be repeated with permission of the Director of Religious Studies.

Schedule to be announced, 3 credits

RLS 230 Judaism

A critical introduction to the scripture, the oral law, the traditions, the history, and the religious practices and beliefs of Judaism.

*Crosslisted with JDH 230.
Fall or spring, 3 credits*

RLS 240 Confucianism and Taoism

An introduction to the basic philosophies and doctrines of Confucianism and Taoism, such as the concept of Tao, non-action, benevolence, and propriety. The course will explore both the similarities and the differences between these two traditions.

Fall or spring, 3 credits

RLS 246 Korean and Japanese Religions

An introduction to the main developments in Korean and Japanese religious history from earliest times to the 19th century, with emphasis on Buddhism, Confucianism, and Taoism, as well as Shamanism in Korea and Shintoism in Japan. The relationship between the Korean form of religious traditions and those found in China and Japan will also be stressed.

Spring, alternate years, 3 credits (not offered in 1985-86)

RLS 260 Buddhism

An introduction to the basic philosophy and doctrines of Buddhism, beginning with a survey of lives and works of major historical figures of Buddhism. The principal issues of Buddhist thought, drawing from Indian, East Asian, and Western sources, will be treated. Particular attention will be paid to the meaning of faith, practice, and enlightenment in Buddhism.

Fall, 3 credits

RLS 270 Christianity

A critical introduction to the scripture, tradition, history, and religious practices and beliefs of Christianity.

Spring, 3 credits

RLS 280 Islam

An introduction to the main features of Islamic revelation as contained in the Qur'an; its impact on the major intellectual, legal, and social institutions of the world it subsequently shaped; schism in the form of the Shi'ite sects; Sufism. The course will conclude with an examination of Islam in the modern world.

Fall or spring, 3 credits

RLS 301 Sources and Methods

An inquiry in depth into the application of critical, historical, and philosophical methods to religious texts and experiences. An introduction to the resources and limitations of academic study of religion.

Prerequisites: RLS 101 or 150, and one 200-level course; or two 200-level RLS courses
Fall, 3 credits

RLS 302 Contemporary Theology

An intensive study of influential recent work in theology, with primary emphasis on contemporary Christian and radical theology, including such themes as the death of God, the impact of historical criticism of scripture, and the emerging dialogue among the world religions.

Prerequisite: One 200-level RLS course
Alternate years, 3 credits (not offered in 1985-86)

RLS 320 The Rabbinic Tradition

The origins and development of the rabbinic tradition; examination of the chief elements of rabbinic teaching at various times; and analysis of major types of rabbinic literature. Crosslisted with JDH 320.

Prerequisite: JDS/HIS 225 or 226 or JDH/RLS 230
Fall, alternate years, 3 credits (not offered in 1986-87)

RLS 321 Christian Classics

Case studies in Christian hermeneutics. An introduction to the background, content, and influence of selected classic individual Christian texts or genres of writing, heterodox as well as orthodox, selected from New Testament and apostolic literature, patristic and medieval authors, and decisive reformation and modern works. May be repeated as subject matter differs.

Prerequisites: RLS 270 or EGL 262; permission of instructor.
Alternate years, 3 credits (not offered in 1986-87)

RLS 330 Special Topics

An investigation of a particular area or dimension of religious studies which will vary from semester to semester. May be repeated with permission of Program Director.
Schedule to be announced, 3 credits

RLS 335 Shamanism and Art

An examination of the beliefs, rituals, symbols, and art of shamanism, one of the most archaic forms of religion. Topics will include Paleolithic, Siberian, and Native American shamanism and art, drugs and shamanism, psychology and shamanism, and group shamanism. Crosslisted with ARH 335.

Prerequisites: ARH 101 or 102 or 110 or RLS 101; two other courses in the humanities
Fall, alternate years, 3 credits (not offered in 1985-86)

RLS 341 Meditation and Enlightenment

A critical analysis of the traditions, practices, and literature of Zen and other traditions of Buddhism, with particular attention paid to the meaning of enlightenment and the practice of meditation.

Prerequisite: One 200-level religious studies course
Spring, 3 credits

RLS 350 Philosophical Theology

A study of selected theological problems that integrate religious concerns with rigorous philosophical reflection, West and East, including the nature of the religious object, knowledge of the transcendent, the experiential basis of faith, the meaning of historical process, and resources and dangers in selfhood.

Prerequisite: One 200-level RLS or PHI course
Alternate years, 3 credits (not offered in 1985-86)

RLS 370 Tibetan Buddhism

The dynamics of Tibetan Buddhism from traditional texts and living sources; tantric practices, mandalas, meditation.

Prerequisite: One 200-level religious studies course or PHI 111 or 112
Spring, alternate years, 3 credits (not offered in 1985-86)

RLS 372 Buddhist Classics

An introduction to Buddhist hermeneutics through the critical analysis of Buddhist texts, focusing each semester on one text fundamental for Madhyamika, Yogacara, Tathagatagarbha, Hua-Yan, T'ien-t'ai, Ch'an (Zen), or Pure Land traditions. May be repeated for credit as subject matter differs.

Prerequisite: RLS 260 or 341 or PHI 111 or 112
Alternate years, 3 credits (not offered in 1986-87)

RLS 380 Islamic Classics

A study in depth of Islamic texts in translation. Selections may be made from the Koran, the Hadith, the Law, and from one or more of the major intellectual schools, such as Kalam (scholastic theology), Peripatetic philosophy, illuminationist theosophy, Sufism, and the "Transcendent Theosophy" of the School of Isfahan. May be repeated for credit as subject matter differs.

Prerequisite: RLS 280
Spring, alternate years, 3 credits (not offered in 1986-87)

RLS 400 Religious Studies Seminar

A proseminar for senior majors in religious studies, focusing on the problem of the relation between phenomenology, hermeneutics, and history of religions on the one hand and their theological and philosophical interpretation on the other. May be repeated once.

Prerequisite: Permission of Program Director
Spring, 3 credits

RLS 447 Readings in Religious Studies

Directed study with religious studies faculty, limited to religious studies majors or upper-division students working on advanced problems in religious studies. May be repeated.

Prerequisite: Permission of instructor and Program Director
Fall and spring, 1 to 6 credits

RLS 465 Judaic Responses to Catastrophe

The responses of Judaic thinkers from the Bible to the Second World War to the problem of historical disaster and the need to understand and respond to it. Particular attention will be given to the question of long-term continuity and the appearance of innovation in such responses. Crosslisted with JDH 465.

Prerequisites: JDS/HIS 225 or 226 or JDH/RLS 230
Spring, alternate years, 3 credits (not offered in 1986-87)

RLS 495-496 Senior Honors Project

A two-semester project for RLS majors who are candidates for the degree with honors. Arranged during the junior year with the program, the project involves independent study and the writing of a paper under close supervision of an appropriate faculty member, on a topic chosen by the student.

Prerequisite: Permission of instructor and Director of Undergraduate Studies
Fall and spring, 3 credits each semester

Interdisciplinary Program in Social Sciences

Professors

Beverly Birns, Coordinator of Women's Studies, Ph.D., Columbia University; Psychology; women's studies.

Shi Ming Hu, Coordinator of Asian Studies, Ed.D., Columbia University; Chinese and Asian studies; social science education.

Joel T. Rosenthal, Ph.D., University of Chicago; Social history.

Eli Seifman, Director, Ph.D., New York University; Social science education; Asian studies.

Assistant Professor

Judith Wisnia, Ph.D., State University of New York at Stony Brook; Women's history; labor history; European history.

Lecturer

David Lichtenstein, Coordinator of Child and Family Studies, Ph.D., State University of New York at Stony Brook; Early childhood; psychology.

Teaching Assistants

Estimated number: 1

This interdisciplinary degree program (SSI) is designed for students with broad interests in the findings, questions, and methods of the social and behavioral sciences. Individual plans of study are created by combining courses from among the offerings of Africana studies, anthropology, economics, history, linguistics, political science, psychology, sociology, and the social sciences

program courses (e.g., SSI 101). The student must complete work in at least four of these fields.

The social sciences program is the administrative home of three minors, Asian studies, child and family studies, and women's studies. Social sciences majors who wish to follow one of these areas of concentration may choose courses in the minor so as to simultaneously fulfill a large number of their social sciences requirements. (Requirements for the three minors appear under each program title elsewhere in the alphabetical listings of Arts and Sciences programs. Further information on the minors is available at the Social Sciences Interdisciplinary Program office.)

Requirements for the Major in Social Sciences

The interdisciplinary major in social sciences leads to the Bachelor of Arts degree. The following courses are required:

Courses in at least four of the social science departments (AFS, ANT, ECO, HIS, LIN, POL, PSY, SOC, SSI), distributed as follows:

	<i>Credits</i>
A. Two courses in <i>each</i> of any two social science departments	12
B. Four courses in <i>each</i> of any two other social science departments (at least two of the courses in each department must be numbered 300 or above)	24
C. Four additional courses in any social science department or departments numbered 300 or above	12
Total	48

In addition:

1. At least 36 credits of the 48 must be earned by letter grade.
2. No more than nine credits of independent work (273, 445-449, 481-489) and no more than six credits of such work from any single department or program may be used toward fulfillment of major requirements. Only three credits of SSI 488 or 489 may count toward the major.
3. Up to six credits of related courses numbered 300 or above may be substituted for two of the four courses needed for requirement C. An up-to-date list of approved related courses is available from the Social Sciences Interdisciplinary Program office. Social sciences majors who have elected the Asian studies, child and family studies, or women's studies minor may use upper-division humanities courses listed for their minor as related courses.
4. The following may not be used to satisfy requirements A and B, but they may be used as related courses in requirement C: SSI 397, 398, 490, and upper-division Africana studies courses with the AFH designator.
5. AFS 283, PSY 283, SSI 283, 450, 454, LAN 111, 112, 191, 192, 375, and lower-division AFH courses may not be used to fulfill major requirements. Only one teaching practicum (475, 476) may be counted.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

SSI 101 Social Control

An introductory exploration of the nature and variety of social organization. Special attention is paid to political philosophy, to the concept of "social determinism," and to various forms of social bond and constraint. Readings will be drawn from the various social sciences.

Fall or spring, 3 credits

SSI 102 Introduction to Women's Studies

A general introduction to women's studies and to the feminist movement. The course looks at the way a number of different academic disciplines have dealt with the female component of society, and examines

the contributions women have made and the roles they have played in a variety of areas.
Fall or spring, 3 credits

SSI 103 Childhood: Social and Historical Perspectives

Theories and conceptions of child development and the practices of child-rearing will be related to social and historical changes in the 19th and 20th centuries: the effects of the Industrial Revolution and urbanization on children's lives, as well as theories of child-rearing; such phenomena as infant mortality, birth control, child health, and child-care arrangements; major theories, e.g., those of Freud, Skinner, Piaget, and Erikson, as products of a social and historical context. May not be taken by seniors majoring in any social science.

Fall or spring, 3 credits

SSI 140 Introduction to China Today

An introduction to the People's Republic of China through the study of selected topics dealing with life and society in China today. Selected topics include children and youth, women, literature and art, education, medicine and health care, communes, national minorities, language reform.

Fall or spring, 3 credits

SSI 265 Drug and Alcohol Education

The examination of drug- and alcohol-related issues as they concern the teacher. The course will examine currently available information from an interdisciplinary perspective and will be concerned with the pre-college setting.

Fall and spring, 1 credit

SSI 281 Seminar in Child Development

Students will meet weekly to discuss their experience in the child-care center and to learn basic principles of early childhood education and development relevant to the day care situation. Lectures and demonstrations of early childhood activities will emphasize language and cognition, social and motor behavior, "play," "arts and crafts," and various techniques for organizing group and individual energies.

Prerequisites: PSY 211 or SSI 103; permission of instructor

Corequisite: SSI 283

Fall and spring, 3 credits

SSI 283 Practicum in Child Development

Students will work nine hours a week in a full-day child-care center to gain practical experience in teaching, making materials, and observing pre-school children.

"Day-book" records will be kept and will be one of the bases for discussion in SSI 281. This course will require students to use the knowledge gained in SSI 281 in a closely supervised situation. May not be counted

toward the College distribution requirement in social and behavioral sciences nor may it be repeated for credit. Satisfactory/Unsatisfactory grading only.

Prerequisites: PSY 211 or SSI 103; permission of instructor

Corequisite: SSI 281

Fall and spring, 3 credits

SSI 305 Children and the Family: Contemporary Issues

Analysis of the influence of the changing family on the psychological development of children. Major topics will be: adolescent parents; single parent households; working mothers; divorce; abuse and neglect and poverty.

Prerequisites: 18 credits in the social sciences, including a course in research methods or statistics and two courses chosen from SSI 102, 103, and PSY 211

Fall or spring, 3 credits

SSI 307 Psychology of Women

The psychological impact of important physiological and sociological events and epochs in the lives of women: menstruation, female sexuality, marriage, childbirth, and menopause; women and mental health, mental illness, and psychotherapy; the role of women in the field of psychology.

Prerequisites: SSI 102; ANT 367 or PSY 103 or 104 or SOC 247

Fall or spring, 3 credits

SSI 311 Interdisciplinary Problems in the Social Sciences

This course treats a problem that has been tackled by a number of the social sciences. It illustrates the different natures of approach, method, and findings. The actual problem chosen will vary from semester to semester. May be repeated.

Prerequisites: 18 credits of social and behavioral sciences

Schedule to be announced, 3 credits

SSI 333 Women in U.S. History

An interpretation of the history of women in relation to the major themes in American history such as industrialization and urbanization. Emphasis will be placed on topics of special interest to women, i.e., the cult of domesticity, the birth control movement, feminism, women and reform, changing attitudes toward female sexuality.

Fall or spring, 3 credits

SSI 334 Women, Work, and Family in Modern European History

An analysis of the effect of urbanization and industrialization on women and the family in Europe from 1750 to the present. Special emphasis will be placed on the development of the ideology of the "angel in the house" and the growth of female participation in the work force. Among the topics covered will be: domestic work; prostitution; sexual attitudes and mores; child-rearing practices; women and revolutionary movements; and the growth of feminism.

Prerequisites: SSI 102 or one history course
Fall, alternate years, 3 credits (not offered in 1986-87)

SSI 339 Children's Play

An investigation of the significance of play in human development, familiarizing the student with the psychological and sociological theories of play and considering the application of these theories in educational and clinical settings. The course will be especially useful to students who are contemplating professional work with children.

Prerequisite: SSI 103 or PSY 211

Fall or spring, 3 credits

SSI 350 Foundations of Education

An interdisciplinary study of the foundations of education focusing on the findings of the social and behavioral sciences as related to education and teaching. The course is designed to meet the needs of students enrolled in the secondary teacher preparation programs.

Prerequisite: Upper-division standing

Fall and spring, 3 credits

SSI 397 Teaching Social Studies

A study of social studies as a subject taught in the secondary schools, the nature of the social studies, curricula models, scope and sequence of topics offered, new programs of social studies instruction, etc. Designed for prospective teachers of social studies in secondary schools.

Prerequisites: A minimum of five social science courses numbered 200 or higher
Fall, 3 credits

SSI 398 Social Studies Teaching Strategies

An examination of the instructional methods and materials for teaching social studies at the secondary school level. Designed for prospective teachers of social studies in secondary schools.

Prerequisite: SSI 397

Spring, 3 credits

SSI 405 Seminar in Children and Social Policy

An examination of the social and political factors that determine the legislation affecting children and the evaluation of program effectiveness. The history of programs, beginning with the New Deal, will be explored. Major focus will be on current legislation. The following issues will be analyzed: child health, AFDC, nutrition, education of the handicapped, adoption and foster care, Head Start, day care, and child abuse.

Prerequisites: 24 credits in the social and behavioral sciences

Spring, 3 credits

SSI 407 Senior Seminar in Women's Studies

An exploration of significant feminist scholarship in various disciplines. Seminar participants will present and discuss reports on reading and research.

Prerequisite: Completion of 15 credits of the women's studies minor

Fall or spring, 3 credits

SSI 417 Senior Seminar in Child Care

A seminar designed for advanced students in the minor in child and family studies. Various current topics in the field will be covered, including program and policy issues as well as child psychology and development.

Prerequisites: Senior standing; SSI 281 and 283

Fall or spring, 3 credits

SSI 447 Directed Readings in Social Science

Individually supervised reading in selected topics of the social sciences. May be repeated, but total credit may not exceed six credits.

Prerequisite: Permission of instructor and program

Fall and spring, 1 to 3 credits

SSI 450 Supervised Student Teaching

Prospective secondary social studies school teachers will receive supervised practice teaching by arrangements with selected Long Island secondary schools. The student teacher reports to the school to which he or she is assigned for a full school day for the semester. Frequent consultation with the supervising teacher helps the student to interpret and evaluate the student teaching experience. Applications must be filed in the semester preceding that in which the student

plans to student teach. The dates by which applications must be completed will be announced. Satisfactory/Unsatisfactory grading only.

Prerequisites: SSI 397 and 398; 3.0 grade point average in the major; 2.75 grade point average overall; enrollment in the Social Studies Teacher Preparation Program; approval of social studies coordinator

Corequisite: SSI 454

Fall and spring, 12 credits

SSI 454 Student Teaching Seminar

Seminar on problems and issues of teaching social studies at the secondary school level. Analysis of actual problems and issues encountered by the student in his or her student teaching experience.

Corequisite: SSI 450

Fall and spring, 3 credits

SSI 461 Senior Seminar in Asian Studies

This interdisciplinary seminar will bring together faculty members and students to discuss and do research on various problems of current interest in the field of Asian studies, including such topics as agrarian unrest; nationalism; regional economic integration; problems of modernization, industrialization, historical continuity and discontinuity; and comparative aesthetics. A seminar director will be responsible for the selection of the topic and the faculty participants. May be repeated.

Prerequisites: 18 credits in Asian studies

Fall and spring, 3 credits

SSI 475 Undergraduate Teaching Practicum

Each student will conduct a weekly recitation section that will supplement a lecture course. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion and helping students with research papers.

Satisfactory/Unsatisfactory grading only.

Prerequisites: Social Science Interdisciplinary major; senior standing; interview; permission of instructor

Fall and spring, 3 credits

SSI 487 Independent Project in the Social Sciences

Interdisciplinary independent projects in the social sciences designed to enable students to combine academic and field work on a practical or community problem. There will be an emphasis on team projects under special supervision. May be repeated.

Prerequisites: 18 credits in the social sciences; permission of program director

Fall and spring, 1 to 6 credits

SSI 488 Internship

Participation in local, state, or federal government public and private agencies and organizations. Students will be required to submit written progress reports and a final report on their experience to the faculty sponsor and the program. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.

Prerequisites: 15 credits in social science; permission of instructor, program, and Office of Undergraduate Studies

Fall and spring, 3 to 12 credits

SSI 489 Washington Internship

Designed so that students can participate in the Washington Center for Learning Alternatives (W.C.L.A.) as interns in private or public sector organizations and agencies. Students will be supervised by selected practitioners within the organization or agency. Students will be required to submit journals of experience and observation which, together with the supervisors' report, become the basis for a Satisfactory/Unsatisfactory grade. Only three credits for this course may be applied toward major requirements. Crosslisted with POL 489.

Prerequisites: Admission to W.C.L.A.; 15 credits from at least three social science departments

Corequisite: SSI 490

Fall and spring, 12 credits

SSI 490 Washington Seminar

Seminar offered in Washington as part of the internship program of the Washington Center for Learning Alternatives (W.C.L.A.). The seminars are taught by people with experience in public and private agencies, public policy formulation, and relevant academic and professional experience. Students are offered work in several program areas designed to complement their internships, such as law and justice, congressional studies, policy studies, community-urban service, and studies in government. Crosslisted with POL 490.

Prerequisites: Admission to W.C.L.A.; 15 credits from at least three social science departments

Corequisite: SSI 489

Fall and spring, 3 credits

Social Studies Secondary Teacher Preparation Program

Program Coordinator

Eli Seifman: Social Sciences Interdisciplinary

This program offers the student the opportunity to prepare for a teaching career and to complete the requirements for a New York State

Provisional Certificate as a teacher of secondary school social studies.

Students who wish to enter this program are expected to consult the program advisor and establish an advisement folder prior to the beginning of the junior year. Failure to do so may result in a delay in meeting the certification requirements.

Requirements

A. Preparation in Social Science
A minimum of 48 credits in social science departments or interdisciplinary programs, excluding psychology and linguistics.

1. Included in the social science credits must be at least 18 credits distributed as follows:
three credits in economics;
three credits in Asian history,
three credits in African history,
three credits in Latin American history; and
three credits in U.S. history

Credits

48

2. The major requirements of one of the following departments or interdisciplinary programs: Africana Studies, Anthropology, Economics, History, Political Science, Social Sciences Interdisciplinary Program, Sociology. *These are the only majors acceptable for the Social Studies Secondary Teacher Preparation Program.*

B. Preparation in Professional Education

These requirements include a course in foundations of education (SSI 350); training in drug and alcohol education (SSI 265); six credits in methods and materials of teaching social studies (SSI 397 and 398); student teaching (SSI 450); and a student teaching seminar (SSI 454).

25

Total 73

Socio-Legal Studies

Minor Coordinator

June Starr: Anthropology

The interdisciplinary minor in socio-legal studies (SLS) is intended for students who have an interest in law and social control and are majoring in one of the social and behavioral science departments, interdisciplinary programs, or the humanities. It emphasizes the interrelationships between social values, social control processes, bureaucracies, and legal institutions. It will be useful to students planning a career in public policy, law, legal services, rural development studies, and urban affairs.

Requirements for the Minor in Socio-Legal Studies

1. POL 220
2. Ethnic Diversity and Legal Pluralism: POL 325 or ANT 355 or AFS 490 or another designated course. (Consult minor coordinator for approved alternatives.)
3. 12 credits chosen from the list of approved courses. (A maximum of 6 credits may be applied from research or internship options to this requirement. See note.)
4. ANT 411

Credits

3

3

12

3

Total 21

Notes:

1. No course for the minor may be taken P/NC.
2. No more than nine credits, excluding ANT 411, may be taken in any one department.
3. ANT 411 will normally be taken in the senior year after completing at least three other courses in the minor, including POL 220.
4. At least nine credits among those used for the minor must be in upper-division courses.
5. Up to six credits of directed research or internship may be applied to the third requirement of the minor if the specific research project or internship is approved in advance by the student's minor advisor.

Declaration of the Minor

Students must declare the socio-legal studies minor no later than the middle of their junior year, at which time they will consult a minor advisor and plan the courses they will take for fulfillment of the minor.

Approved Courses

The following are approved courses for the minor:

AFS 490	Legal Process and Social Structure
ANT 355	Legal Anthropology
HIS 379	American Legal History
PHI 375	Philosophy of Law
POL 311	Introduction to International Law

POL 320	Constitutional Law and Politics: United States
POL 323	The Legislative Process
POL 325	Civil Liberties and Civil Rights
POL 343	Behavioral Assumptions of the Law
POL 351	Political Theory and Public Policy
POL 366	Government Regulation of Business

POL 368	Criminal Justice Policy
PSY 310	Studies of Social Conflict
SOC 309	Social Conflicts and Movements
SOC 354	Sociology of Law
SSI 405	Seminar in Children and Social Policy

Other courses may be added as appropriate. Check with the minor coordinator.

Department of Sociology

Distinguished Professor

Lewis A. Coser, Ph.D., Columbia University: Theory; sociology of knowledge and intellectuals; conflict and violence; political sociology.

Professors

Stephen Cole, Director of Undergraduate Studies, Ph.D., Columbia University: Sociology of science, medicine, and the professions.

Rose Laub Coser, Ph.D., Columbia University: Medical; family; organizations; socialization; gender roles.

H. Warren Dunham, Adjunct, Ph.D., University of Chicago: Medical sociology; social psychology; mental illness; mental health.

Kenneth A. Feldman, Ph.D., University of Michigan: Social psychology; youth; higher education.

John H. Gagnon, Ph.D., University of Chicago: Sexual behavior; marriage and the family; social change; deviance.

Erich Goode, Ph.D., Columbia University: Deviance; criminology; religion.

Norman Goodman, Chairperson, Ph.D., New York University: Social psychology; marriage and the family; socialization. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1975-76.

Mark Granovetter, Ph.D., Harvard University: Economic and political sociology; stratification; mathematical models; theory.

James B. Rule, Ph.D., Harvard University: Theory; political sociology; social control.

Hanan C. Selvin, Emeritus, Ph.D., Columbia University: Research methods; statistics; marriage and the family.

Graham B. Spanier, Ph.D., Northwestern University: Marriage and the family; research methodology; social policy and application of family research.

Associate Professors

Diane Lee Barthel, Ph.D., Harvard University: Urban sociology; community; race and ethnicity; sex roles.

O. Andrew Colver, Ph.D., University of California, Berkeley: Demography; urban; social planning; ecology; organizations.

Scott L. Feld, Ph.D., The Johns Hopkins University: Collective decision making; games and simulation; small groups; research methods.

Ned Polsky, B.A., University of Wisconsin: Deviance; criminology; stratification; sociology of the arts.

Michael Schwartz, Ph.D., Harvard University: Political sociology; research methods; ethnic relations; mathematical models; historical methods. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1974-75.

Judith Tanur, Ph.D., State University of New York at Stony Brook: Statistics; research methods; social psychology.

Andrea Tyree, Graduate Program Director, Ph.D., University of Chicago: Demography; stratification; statistics; research methods.

Assistant Professors

Said Amir Arjomand, Ph.D., University of Chicago: Comparative sociology; historical sociology; theory; sociology of religion.

Paul Attewell, Ph.D., University of California, San Diego: Complex organizations; economics; theory.

Ivan D. Chase, Ph.D., Harvard University: Social stratification; conflict and cooperation; biosociology.

Lyle Hollowell, Ph.D., University of Minnesota: Deviant behavior; law and criminal justice; social control.

Bruce R. Hare, Ph.D., University of Chicago: Sociology of education; social psychology; race and self-concept.

Frank Romo, Ph.D., Yale University: Deviance; social control; social organizations; research methods.

Patricia A. Roos, Ph.D., University of California, Los Angeles: Comparative stratification; work and professions; women's labor force; research methods.

Richard Williams, Ph.D., State University of New York at Binghamton: Labor migration; historical sociology; visual sociology.

Glenn Z. Yago, Ph.D., University of Wisconsin: Urban sociology; sociology of the community; political sociology.

Teaching Assistants

Estimated number: 18

Requirements for the Major in Sociology

The major in sociology leads to the Bachelor of Arts degree. The following courses are required:

A. Study within the Area of the Major	<i>Credits</i>
1. Required courses	
SOC 103 Introduction to Sociology or 104 Introduction to Sociology: Honors	3
SOC 121 Library Skills for Sociological Research	1
SOC 201 Research Methods in Sociology	3
SOC 202 Statistical Methods in Sociology	3
(Preferably taken no later than the sophomore year; SOC 211-212, 8 credits, may be substituted for SOC 201 and 202)	
SOC 361 Historical Development of Contemporary Sociology	3
SOC 362 Introduction to Sociological Theory (SOC 361 and 362 should be taken consecutively during the junior or senior year)	3
2. Sociology electives	15
Free selection of courses from among all sociology course offerings.	
Subtotal	31

Notes on Group A:

1. SOC 104 and SOC 211-212 are recommended for majors considering graduate study.
2. A total of at least 31 credits of sociology must be taken; if any of the required courses is waived for any reason, it must be replaced with an additional elective, so that the total of 31 credits in sociology is maintained.

B. Study in Related Areas

At least three courses (9 credits) chosen from one of the following related social sciences: Africana studies (only those courses with designator AFS), anthropology, economics, history, political science, and psychology. (Credits from applied social science professions like social work, police science, education, and management science are not applicable.)

9
Total 40

C. Grading Policy

1. No more than two courses from the requirements of the department, including sociology electives (A, 2 above) and related social science courses (B, above), but excluding required sociology courses (A, 1 above), may be taken Pass/No Credit. None of the required sociology courses may be taken Pass/No Credit.
2. Each of the six courses named under A, above, must be passed with a grade of C- or higher.
3. For transfer students who are sociology majors, special regulations apply:
 - a. No grade of less than C- for a sociology course taken elsewhere than at Stony Brook will be accepted for credit in the major.
 - b. For the requirement of three courses in a related social science (B, above), any passing grade will be sufficient to transfer for credit.

Note: The Sociology Department requires that transfer students take at least 12 credits in sociology in residence at Stony Brook to complete the sociology major.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

SOC 103 Introduction to Sociology

A survey of the main concepts in sociological analysis. This course is the prerequisite for most higher-level courses in sociology. May not be taken for credit in addition to SOC 104 or 301.
Fall and spring, 3 credits

SOC 104 Introduction to Sociology: Honors

An enriched introduction to the sociological perspective with an emphasis on how sociologists develop and test their hypotheses about human behavior. This course will require more reading and cover more difficult topics than SOC 103. Students who want to do this extra work will benefit by receiving a more in-depth introduction to

sociology in a relatively small class. May not be taken for credit in addition to SOC 103 or 301.

Prerequisite: Satisfaction of mathematics proficiency requirement; EGC 101 or "Strong" on English Placement Examination
Fall and spring, 3 credits

SOC 121 Library Skills for Sociological Research

An introduction to basic library skills and bibliographic resources for sociological research, using a self-paced workbook approach. Reference and other library materials of special interest to sociology students are covered. Such skills as the efficient use of card catalogs, bibliographies, and specialized indexes are also treated. No class sessions are held, but opportunity for adequate contact between students and librarian is provided.

Prerequisite: SOC 103 or 104
Fall and spring, 1 credit

SOC 201 Research Methods in Sociology

Methods of collecting and analyzing empirical data to test sociological hypotheses. Emphasis will be on multivariate analysis of tabular and statistical data. Not for credit in addition to SOC 211-212.

Prerequisite: SOC 103 or 104
Fall and spring, 3 credits

SOC 202 Statistical Methods in Sociology

An introduction to the use and interpretation of statistical methods in social research; descriptive and inferential statistics. May not be taken for credit after any other statistics course.

Prerequisites: SOC 103 or 104; satisfaction of mathematics proficiency requirement
Fall and spring, 3 credits

SOC 204 Courtship and Marriage

Social factors affecting courtship, mate selection, and engagement; dynamics of marital adjustment and parenthood.

Fall and spring, 3 credits

SOC 211-212 Methods and Statistics I, II

Students wishing a more thoroughly integrated view of sociological methodology and the place of statistical techniques in it should register for this two-semester course rather than for SOC 201 and 202. Students will learn descriptive and inferential statistics in the course of designing and carrying out either individual or group research projects; the students will consider the interrelations between theory and research as well as the mechanics of carrying out the research process. Every student will be required to analyze a set of data and to write a research report. May not be taken for credit in addition to SOC 201 and 202.

Prerequisites: SOC 103 or 104; satisfaction of mathematics proficiency requirement
Fall (211) and spring (212), 4 credits each semester

SOC 243 Sociology of Youth

Adolescent socialization; age structures and intergenerational conflict; peer groups and youth subcultures.

Fall and spring, 3 credits

SOC 247 Women and Men

The roles of women and men in modern society; changing relations between the sexes; women's liberation and related movements.

Fall and spring, 3 credits

SOC 264 Introduction to Middle Eastern Society

A broad survey of society, politics, and culture in the Islamic Middle East and North Africa. The course will include an examination of Middle Eastern social structure, culture, and religion. Social stratification and the relationship between the pastoral/nomadic, agrarian, and urban sectors of Middle Eastern societies will be analyzed. The major patterns of social change, modernization of states, and political revolutions in the 20th century will also be studied.

Fall, 3 credits

SOC 301 Principles of Sociology

An introduction for upper-division students committed to a major in a different field who want to find out how the sociologist looks at the world. The course will illustrate the use of a sociological perspective in the analysis of the social world, rather than focus on sociological concept development. Topics to be included will be chosen from among the following: ethnic relations, deviance and delinquency, socialization, organizational analysis, the family as a social institution, population analysis, urban life. Not for credit in addition to SOC 103 or 104, nor for major credit. May be used as a prerequisite for higher-level sociology courses in place of SOC 103 or 104.

Prerequisites: Upper-division standing; a major other than sociology

Fall, 3 credits

SOC 302 American Society

Intended for students who wish to look at American society through the eyes of the sociologist. Included in the course is the sociological view of American social structure in terms of power and patterns of inequality, the legal system, ethnic relations, social mobility, and urban problems.

Prerequisite: Upper-division standing
Spring, 3 credits

SOC 303 Social Stratification

Theories of social stratification; patterns of differentiation in wealth, prestige, and power;

social mobility; power structures and elites.
Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits

SOC 304 Sociology of the Family

Analysis of the family as a major social institution; examination of the structure and functions of the family in various societies.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 307 Social Planning

Deliberate attempts to introduce change in society; methods of evaluating the success of social change programs; conditions affecting the success of such programs.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits

SOC 308 Social Welfare: Policies and Programs

Consideration of the historical and contemporary social definitions, distribution, and status of the poor in the United States; analysis of alternative explanations for their situation; and study of the effects of social welfare institutions upon the poor.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 309 Social Conflicts and Movements

An examination of aggregate phenomena; "revolutionary" and "counter-revolutionary" programs and organizations. Historical and cross-cultural examples will be emphasized.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 310 Ethnic Relations

The formation, migrations, and conflicts of ethnic and other minority groups; prejudice, discrimination, and minority self-hatred.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 315 Sociology of Technology

Social systems and the "tools" of various kinds which they develop to shape their

environment. Concentration on technologies of highly developed, modern societies and on ethical issues involved in attempts to guide the development and effects of these technologies. Consideration will be given to the role of technology in all societies, from the simplest to the most developed.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 320 Population Problems

Sources and consequences of changes in population size and composition; the "demographic explosion."

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits

SOC 323 Urban Society

The emergence of cities and the process of urbanization; an examination of urban structure; the consequences of the urban milieu for interpersonal relations and institutions.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 335 Sociology of the American Labor Movement

An analysis of the rise and present state of the American labor movement with emphasis on the growth of large corporations, the role of the state in American industry, imperialism, and the influence of class, race, and gender in American society.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, alternate years, 3 credits (not offered in 1986-87)

SOC 336 Social Change

The impact of technological, generational, and cultural forces on social organization from a historical and comparative perspective.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits

SOC 337, 338 Sociology of Deviance and Crime

An integrated consideration of deviance, crime, and delinquency from a sociological perspective. The first semester will focus on competing theories of the nature and etiology of deviant and criminal behavior, problems of research in these areas (and the related technical, legal, and ethical issues), and substantive findings for

"non-victim" crimes and legal but morally stigmatized behavior. Second semester will include topics on the substantive findings about juvenile crime, adult victim crime, and a sociological view of the control of deviant and criminal behavior.

Prerequisites to SOC 337: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Prerequisite to SOC 338: SOC 337

Fall and spring, 3 credits each semester

SOC 339 Sociology of Alcoholism and Drug Abuse

An examination of the sociological literature on alcoholism and drug abuse. Topics include addictive careers, the epidemiology (spread) of abuse, history of attempts to control alcohol and drugs, treatment approaches, and policy alternatives.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, alternate years, 3 credits (not offered in 1985-86)

SOC 341 Historical Sociology

Sociological theories and methods applied to the study of historical phenomena such as revolutions, migration, and industrialization.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences; a history course is also recommended

Fall, alternate years, 3 credits (not offered in 1985-86)

SOC 342 The Use of Computers in Sociology

A general introduction to operating systems, storage media, and data management; statistical computing from demand mode using SPSS and BMDP; and introduction to programming languages. The course, which combines classroom work and a supervised laboratory, is designed to teach students how to use the computer to do sociological analysis.

Prerequisites: SOC 103 or 104; 201, 202 or 211-212

Spring, 4 credits

SOC 344 Social Ecology

Analysis of how populations gain sustenance from their environments through organization, information, and technology. Evolution of technology and its ecological consequences for population growth, urbanization, social stratification, environmental destruction, and

the quality of life. Problems in managing the human environment and communities.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 351 Sociology of Literature

Literature as a symbolic expression of social structure; the relations between literary movements and other forms of social activity.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, alternate years, 3 credits (not offered in 1985-86)

SOC 352 Sociology of Religion

The ways in which sociocultural processes affect and are influenced by religious belief systems and organizations; changing structures and functions of religious institutions.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 353 Sociology of Science

Social influences on the choice of research problems and on the behavior of scientists; the social organization of scientific enterprises.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, alternate years, 3 credits (not offered in 1986-87)

SOC 354 Sociology of Law

Law as an institution of social control; the legal profession, court systems, and bureaucratization of the legal process; the relation of law to social change.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 356 Political Sociology

Social structure and processes as affecting, and affected by, political behavior and organizations; the sociology of power, authority, and legitimacy.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 358 War and Military Institutions

The role of violence in social affairs; military organizations; civil-military relations.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, alternate years, 3 credits (not offered in 1985-86)

SOC 360 Comparative Social Structures

The principal complex societies and their central institutions, with emphasis on industrialization and economic development.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 361 Historical Development of Contemporary Sociology

Main currents in the development of theories and empirical studies of society, culture, and personality.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 362 Introduction to Sociological Theory

A systematic treatment of the dominant general orientations in sociology including structural-functional analysis and symbolic interactionism.

Prerequisite: SOC 361

Fall and spring, 3 credits

SOC 370 Work and the Professions

The social patterning of work situations and careers; relations of work organizations to each other and to larger social structures.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits

SOC 372 Mass Communications

Social influences on the content and effects of mass communications; communication systems; the public functions of mass communication.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits.

SOC 373 Collective Behavior

Major unstructured social phenomena—such as mob violence, panics, fads and fashions, and public opinion—as the outcome of collective problem-solving activity.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 380 Social Psychology

Individual and social factors in human behavior; the structure of personality; identity development; communication processes; and attitudes.

Prerequisites: SOC 103 or 104 or PSY 103; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 381 Sociology of Organizations

Bureaucracy as a form of organization; the structure of relations between and within organizations.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall and spring, 3 credits

SOC 382 Small Groups

The structure and functioning of face-to-face groups in field and laboratory settings.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, alternate years, 3 credits (not offered in 1985-86)

SOC 383 Sociology of Business

Sociological material on the role of business organizations in American life. Among the topics to be considered are the internal social organization of large companies, the relationship between management and labor, the interaction between business organizations and the government, and the role of multinational businesses in world affairs.

Prerequisite: SOC 381

Spring, 3 credits

SOC 384 Sociology of the Life Course

Change and stability of individuals through the life course (from childhood to old age) in the context of social structure and interactional processes. Will cover such topics as socially structured periods and transitions in the life course; identity formation; continuity and change; life crises; changing roles and transitions.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Spring, 3 credits

SOC 387 Sociology of Education

Educational institutions as social systems; social patterns in the life-cycles of students and teachers; class and ethnic factors in educational development.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Fall, 3 credits

SOC 390 Special Topics

Lectures on topics of current sociological interest, which will be announced before the start of the term. May be repeated as the subject matter differs.

Prerequisites: SOC 103 or 104; either SOC 201 or two other courses in the social sciences

Schedule to be announced, 3 credits

SOC 401 Senior Seminar in Sociology

Special projects and research papers on a topic of sociological interest, which will be announced before the start of the term. May be repeated once.

Prerequisite: Permission of instructor

Fall or spring, 3 credits

SOC 406 Practicum in Applied Sociological Research

Participation in several simulated and, where possible, actual ongoing research projects.

The following skills will be emphasized:

translating a client's problem into a manageable research project, study design, questionnaire construction, pretesting questionnaires, sample construction, field work administration, tabulation and analysis of data, report writing, the economics and professional standards of the research industry.

Prerequisites: SOC 201, 202 or 211-212; permission of instructor

Spring, 3 credits

SOC 447 Independent Readings

Selected readings, usually in a special area, to be arranged by the student and the instructor. May be repeated. A total of no more than six credits of SOC 447 and SOC 487 may be counted toward the major. A maximum of three credits may be taken with any one faculty member in any one semester.

Prerequisites: Written permission of instructor and of Director of Undergraduate Studies
Fall and spring, 1 to 6 credits

SOC 475 Undergraduate Teaching Practicum

Work with a faculty member as an assistant in one of the faculty member's regularly scheduled classes. The student will be required to attend all the classes, do all the regularly assigned work, and in addition meet with the faculty member at regularly scheduled times to discuss the intellectual and pedagogical matters relating to the course. Satisfactory/Unsatisfactory grading only.

Prerequisites: Upper-division standing; 12 credits of sociology; permission of instructor and Director of Undergraduate Studies

Fall and spring, 3 credits

SOC 487 Independent Research

Designing and carrying out a research project selected by the student and arranged by the student and the instructor. May be repeated. A total of no more than six credits of SOC 447 and SOC 487 may be counted toward the major.

Prerequisites: Written permission of instructor and of Director of Undergraduate Studies
Fall and spring, 1 to 6 credits

SOC 488 Internship

Participation in local, state, and national public and private agencies and organizations. Students will be required to submit written progress reports and a final written report on their experience to the faculty sponsor and the department. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.

Prerequisites: Twelve credits in sociology (including SOC 201); permission of instructor, department, and Office of Undergraduate Studies

Fall and spring, 3 to 12 credits

Department of Theatre Arts

Professors

John Russell Brown, Ph.D., University of Birmingham: History; theory; criticism; dramaturgy.

William J. Bruehl, Chairperson and Producer, Ph.D., University of Pennsylvania: Directing; modern drama; improvisation; acting.

Richard Dyer-Bennet, Emeritus: Voice.

Jonathan Levy, Ph.D., Columbia University: Dramaturgy; criticism; play writing.

John Newfield, Emeritus, Ph.D., University of Vienna: Dramaturgy; theatre history; opera.

Thomas Neumiller, M.F.A., Yale University: Acting; directing.

Maria Ley Piscator, Adjunct, Ph.D., Sorbonne: Acting.

Associate Professors

Leonard Auerbach: Acting; directing; stage management.

Richard Hartzell, Emeritus, M.Ed., Pennsylvania State University: Documentary film; film-making; television as communication.

Sigrid Insull, Director of Undergraduate Studies, M.A., Indiana University: Costume design; acting.

Louis Peterson, M.F.A., Yale University: Play writing; acting.

Carol Rosen, Director of Graduate Studies, Ph.D., Columbia University: History; theory; criticism; modern drama.

Assistant Professors

Robert Alpaugh, Executive Producer, M.F.A., University of North Carolina, Greensboro: Theatre management; directing; acting; dance.

Rustom Bharucha, D.F.A., Yale University: Dramaturgy; theatre history.

Glenda Dickerson, M.A., Adelphi University: Voice; acting; directing.

Robert Heller, M.F.A., Yale University: Technical theatre; sound; lighting.

Lewis Lusardi, Adjunct, B.A., University of London: Television production and programming.

George W. Mercier, M.F.A., Yale University: Set and costume design.

Teaching Assistants

Estimated number: 4

The theatre arts major leads students to an understanding of the traditions and practice of the theatre arts. A student who has completed this major will know what kind of training will be necessary to compete in the profession of theatre or its related fields. Graduates will also be prepared for training in such fields as law, business, publishing, advertising, and other forms of communication. The theatre arts major emphasizes the complementarity of theory and practice. It requires that students read widely into the traditions of theatre, of dramatic literature, criticism, and aesthetics. At the same time the major ensures that students become familiar with the actual doing of theatre by studying design, management, technical theatre, and performance in the context of productions mounted by a professional production staff.

Requirements for the Major in Theatre Arts

The major in theatre arts leads to the Bachelor of Arts degree. The following courses are required:

	Credits
A. Study within the Area of the Major	
1. Level One (15 credits)	
THR 101 Understanding Theatre	3
THR 104 Play Analysis	3
THR 116 Technical Theatre	3
THR 117 Film and Video Narrative	3
One of the following courses:	
THR 105 Acting I	
THR 112 The Performance Process	
THR 130 Introduction to Oral Interpretation	3

2. Level Two (15 credits)	
THR 205 Acting II	3
THR 213 Communicating Visual Techniques	3
THR 281, 282 Theatre History I, II	6
One of the following courses:	
THR 223 Stage Costume I	
THR 246 Stage Lighting	
THR 256 Stage Design I	3
3. Level Three (24 credits)	
12 credits from the following 2-credit courses (any of which may be offered for the major twice):	
THR 301 Stage Management Laboratory	
THR 302 Theatre Management Laboratory	
THR 303 Costume Crafts Laboratory	
THR 304 Marketing Laboratory	
THR 305 Lighting and Sound Laboratory	
THR 306 Stagecraft Laboratory	
THR 307 Performance Laboratory	12
THR 314 Modern Drama on Stage	3
THR 344 The Shakespearean Tradition	3
THR 401 Senior Seminar I	3
THR 402 Senior Seminar II	3
Comprehension examination on 50 plays and required texts at end of junior year.	

B. Study in Related Areas	
Twelve (12 upper-division credits from any department, including three credits in history, subject to prior written approval by advisor	12
Total	66

Note: All courses for the major in theatre arts must be taken for a letter grade. No grade lower than C may be applied toward the major.

Honors Program in Theatre Arts

The honors program is open to seniors majoring in theatre arts who have maintained a grade point average of 3.0 overall and 3.25 in the major.

Students should apply for the honors program at the end of their junior year.

The student must find a faculty member of the department to act as sponsor and, with the approval of the sponsor, submit a written proposal of a project to the department. Acceptance into the honors program depends upon the approval of the proposal by the department. The project may be in history, criticism, directing, film, performing, design, or management. The honors project will be reviewed by at least two members of the Department of Theatre Arts and one outside evaluator. When the honors project has been carried out with distinction, conferral of honors will be contingent on the student's achieving a 3.5 grade point average in all theatre arts courses taken during the senior year.

Course credit for the honors project is given under THR 481-487 or 489. Guidelines are available in the department office.

Minors in Theatre Arts

The several theatre minors, which require 24 credits each, provide an opportunity for a student who wishes to explore new knowledge to sample the standards and practices of *one* of the theatre arts. The minor should lead the student to an understanding of necessary next steps should his or her interest be sharpened by the experiences.

	Credits
Performance Minor in Theatre Arts (TAP)	
THR 104 Play Analysis	3
THR 105 Acting I or	
THR 130 Introduction to Oral Interpretation	3
THR 205 Acting II	3
THR 281, 282 Theatre History I, II	6
THR 322 Acting III	3
THR 352 Acting IV	3
THR 332 Improvisation or	
THR 362 Advanced Acting: Film and Video	3
Total	24

Design Minor in Theatre Arts (TAD)

THR 104 Play Analysis	3
THR 116 Technical Theatre	3
THR 213 Communicating Visual Techniques	3
Two of the following courses:	
THR 223 Stage Costume I	
THR 246 Stage Lighting	
THR 256 Stage Design I	6
THR 316 Advanced Technical Theatre	3
Two of the following courses:	
THR 323 Stage Costume II	
THR 346 Advanced Stage Lighting	
THR 356 Stage Design II	6
Total	24

Play Writing Minor in Theatre Arts (TAW)

THR 104 Play Analysis	3
THR 105 Acting I or	
THR 112 The Performance Process	3
THR 281, 282 Theatre History I, II	6
THR 314 Modern Drama on Stage	3
THR 325 Writing for the Media	3
THR 326 Playwriting	3
THR 485 Projects in Script Writing	3
Total	24

History and Theory Minor in Theatre Arts (TAH)

THR 104 Play Analysis	3
THR 130 Introduction to Oral Interpretation	3
THR 281, 282 Theatre History I, II	6
THR 314 Modern Drama on Stage	3
THR 344 The Shakespearean Tradition	3
THR 401 Senior Seminar I	3
THR 402 Senior Seminar II	3
Total	24

Note: All courses for the minors in theatre arts must be taken for a letter grade. No grade lower than C may be applied to the minors. At least 12 of the 24 credits must be taken at Stony Brook.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System. The following performance courses may not count toward the 90 liberal arts credits required for the B.A. degree: THR 218, 222, 244, 299, and 301 through 307.

THR 101 Understanding Theatre

An overview of performance, design, and production in the theatre. Specific texts will be explored through lectures, demonstrations, and a close examination of the rehearsal process. Professionals working in the theatre will be invited to speak on such topics as stage management, technical production, and direction.

Fall and spring, 3 credits

THR 104 Play Analysis

A close reading of several plays of different periods and styles and a general examination of the elements out of which all plays are made—dialogue, character, plot.

Fall and spring, 3 credits

THR 105 Acting I

The vocabulary and skills of the actor's craft. Lecture and workshop sessions explore the uses of basic acting techniques. Designed for students seriously interested in performing. Students will be auditioned at the first class meeting. May not be taken for credit in addition to THR 112 or 130.

Fall and spring, 3 credits

THR 112 The Performance Process

Introduction to the performer's craft. The broader aspects of the discipline are examined during lecture and workshop sessions; analysis, memorization, and performance of short scenes. Recommended for non-majors and theatre arts students who do not anticipate emphasizing performance. May not be taken for credit in addition to THR 105 or 130.

Fall and spring, 3 credits

THR 116 Fundamentals of Technical Theatre (formerly THR 200)

Basic technical theatre practice and stagecraft, incorporating elements of drafting, construction, lighting, painting, sound, and the handling of stage scenery and properties.

Fall and spring, 3 credits

THR 117 Film and Video Narrative

The techniques of dramatic narrative unique to film and video. The work of great directors from Griffith to Godard and video works from Playhouse 90 to Masterpiece Theatre, as well as the work of Brakhage, Paik, Wegman, and others will be viewed and analyzed.

Fall, 3 credits

THR 130 Introduction to Oral Interpretation

The interpretation of language and imagery that supports effective oral presentation. Students will prepare eight to ten readings for class presentation from diverse source material, including novels, the Greek tragedies, epic poems, and the Bible. May not be taken for credit in addition to THR 105 or 112.

Fall or spring, 3 credits

THR 205 Acting II

Continued training in basic techniques. Advanced work in character analysis and development. Emphasis is on scene study.

Fall and spring, 3 credits

THR 213 Communicating Visual Experience

The development of observational and artistic skills necessary for communicating visual experience. Exploration of various applications including drawing, painting, model- and collage-making, and photography. Emphasis on building an individual approach.

*Prerequisite: THR 101
Fall or spring, 3 credits*

THR 217 Introduction to Filmmaking

The first course in filmmaking techniques requires students to explore the aesthetics of motion through the use of a movie camera and through the experience of combining moving images, by creative editing, into meaningful sequences.

*Prerequisite: THR 117; permission of instructor
Spring, 3 credits*

THR 218 Movement

An introduction to the elements of movement. Structured exercise to encourage appropriate body functioning—balance, coordination, flexibility, and articulateness.

*Prerequisite: THR 105 or 112 or 130
Fall and spring, 2 credits*

THR 222 Stage Makeup

An investigation into the theory, techniques, and materials of stage makeup and its relation to character analysis. Students will explore aspects of facial anatomy, color theory, and graphic representation of three-dimensional form.

*Prerequisite: THR 213
Fall or spring, 1 credit*

THR 223 Stage Costume I

An introduction to costume design including graphic communication and basic costume construction. Exercises in design-rendering techniques, pattern drafting, and design fundamentals.

*Prerequisite: THR 213
Fall, 3 credits*

THR 244 Summer Theatre Workshop

Service as apprentices, working throughout the planning, preparation, and execution of a summer stock series. May be repeated for a maximum of six credits.

*Prerequisite: Permission of instructor
Summer, 1 to 6 credits*

THR 246 Stage Lighting (formerly THR 345)

Basic elements of lighting principles, instrumentation, and control. Introduction to color, design, and aesthetics, including the planning of designs for individual plays.

*Prerequisite: THR 213
Fall, 3 credits*

THR 256 Stage Design I

(formerly THR 355)

An introduction to the aesthetics of scene design with an emphasis on the designer's graphic language. Basic exercise in drafting, perspective drawing, and simplified rendering techniques that pertain to the organization and presentation of the design idea.

*Prerequisite: THR 213
Fall, 3 credits*

THR 270 Basic Audio Production

An introduction to the tools and techniques of radio production. The course will provide a broad theoretical and practical foundation in the technique and aesthetics of sound as they apply to the particular demands of radio and recording.

*Prerequisite: THR 117
Fall or spring, 3 credits*

THR 272 Introduction to Television

An examination of how television works and of the skills and techniques of the professionals and artisans who make it work. Equipment and technique will be demonstrated, but this is not a hands-on course. Broadcast television, cablevision, instructional TV, industrial training, and experiments in community communication will be examined.

*Prerequisite: THR 117
Fall or spring, 3 credits*

THR 281, 282 Theatre History I, II

Evolving architectural concepts, scenic conventions, technology, and production techniques will be studied with reference to corresponding literary, social, and cultural trends. I: Ritual to 1660. II: 1660 to 1932.

*Prerequisite: THR 105 or 112 or 130 or 104
Fall (281) and spring (282), 3 credits each semester*

THR 285 Black Theatre Workshop

A performance workshop and scene study exploring Third World theatre and the relationship of myth and legend to folk drama. May lead to a production in the following semester.

*Prerequisites: Audition; permission of instructor
Fall and spring, 3 credits*

THR 298 Student Media Leadership

A review of the decision-making processes involved in campus media organizations and an investigation of the similarities and differences between the obligations of student and professional media managers. Class meetings are devoted to the discussion of problems related to media production and management, to talks by professionals about their specialties, and to the development of critical skills useful to practitioners and managers.

*Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of instructor
Fall and spring, 1 credit*

THR 299 Special Workshop

Intensive workshops in a specific skill from the disciplines of arts management, directing, performance, design, playwriting, film and television, criticism, etc. Among possible workshops are mask-making, jazz dance, and Shakespearean diction. May be repeated.

*Satisfactory/Unsatisfactory grading only.
Prerequisite: Permission of instructor
Schedule to be announced, 1 to 3 credits, at the discretion of the department*

THR 301 Stage Management Laboratory

Development of skills needed to accomplish the functions of the stage manager. Students in THR 301-307 will meet jointly once each week. May be repeated once.

*Prerequisites: THR 101; 105 or 112 or 130; 116
Fall and spring, 2 credits*

THR 302 Theatre Management Laboratory

Development of practical skills in the business and managerial problems of theatre. Students in THR 301-307 will meet jointly once each week. May be repeated once.

*Prerequisites: THR 101, 104, 116
Fall and spring, 2 credits*

THR 303 Costume Crafts Laboratory

Development of skills needed for costume and accessory construction. Students in THR 301-307 will meet jointly once each week. May be repeated once.

*Prerequisites: THR 101, 116
Fall and spring, 2 credits*

THR 304 Marketing Laboratory

Development of skills needed in marketing theatre. Students in THR 301-307 will meet jointly once each week. May be repeated once.

Prerequisites: THR 101, 104
Fall and spring, 2 credits

THR 305 Lighting and Sound Laboratory

Development of skills needed in installation and control of lighting and sound equipment. Students in THR 301-307 will meet jointly once each week. May be repeated once.

Prerequisites: THR 101, 104, 116
Fall and spring, 2 credits

THR 306 Stagecraft Laboratory

Development of skills needed in theatre construction. Students in THR 301-307 will meet jointly once each week. May be repeated once.

Prerequisites: THR 101, 104, 116
Fall and spring, 2 credits

THR 307 Performance Laboratory

Development of skills in performance through the preparation and rehearsal of a production. Student must audition, be cast in a principal role in a major department production, and be engaged in the entire rehearsal process to receive credit. Students in THR 301-307 will meet jointly once each week. May be repeated once.

Prerequisites: THR 101; 105 or 112 or 130
Fall and spring, 2 credits

THR 314 Modern Drama on Stage

A seminar examining the forms of modern drama in the context of production from 1860 to the present. May not be taken for credit in addition to the discontinued THR 214.

Prerequisites: THR 281 or 282 or EGL 193
Fall or spring, 3 credits

THR 316 Advanced Technical Theatre

Advanced study of materials and techniques of problem solving in stagecraft, including theatre sound, technical direction, advanced drafting, budgeting, crew organization, and planning.

Prerequisites: THR 116; permission of instructor
Spring, 3 credits

THR 322 Acting III

Advanced work in scene study limited to one or two major playwrights.

Prerequisites: THR 205; permission of instructor
Fall or spring, 3 credits

THR 323 Stage Costume II

Advanced study in costume design involving play analysis, design, and presentation techniques with special emphasis on historical research.

Prerequisites: THR 223; permission of instructor
Spring, 3 credits

THR 325 Writing for the Media

Preparation and construction of materials for use in media: radio, television, and motion pictures.

Prerequisites: THR 217 or 270 or 272
Fall and spring, 3 credits

THR 326 Play Writing (formerly THR 225)

A workshop devoted to planning and writing finished scripts for the stage.

Prerequisites: EGL 202 or 285 or THR 104
Fall and spring, 3 credits

THR 331 Voice and the Actor (formerly THR 230)

A practical course in voice production for the actor. Students will participate in exercises for developing the speaking voice with an emphasis on the involvement of the body. Increasing resonance, range, articulation, and their link to acting and improvisation will be explored. The International Phonetic Alphabet will be studied.

Prerequisites: THR 105 or 112 or 130
Fall or spring, 3 credits

THR 332 Improvisation

Drill in both verbal and nonverbal exercises and assorted theatre games leading to the development of improvisational skills. May not be taken for credit in addition to the discontinued THR 232.

Prerequisites: THR 205; permission of instructor
Fall or spring, 3 credits

THR 333 Directing I

The work of the director including selection of a play for production, problems of style, interpretation, and execution and the director's approach to the actor.

Prerequisites: THR 104; THR 105 or 112 or 130; THR 116; THR 281, 282
Fall, 3 credits

THR 336 Stage Management

Various aspects of stage management, including analysis of scripts and reading of blueprints and light plots.

Prerequisites: THR 105 or 112 or 130; THR 116
Fall or spring, 3 credits

THR 339 Directing II

Advanced work in interpretation and handling of production complexities. Students will mount a production.

Prerequisites: THR 205 and 333
Spring, 3 credits

THR 344 The Shakespearean Tradition

Shakespeare's plays in the context of theatre production from his time to the present. Special attention is given to Elizabethan stage conditions, to the task of the actor in contemporary productions, and to problems of design. Plays by Shakespeare's contemporaries will also be considered.

Prerequisites: THR 281, 282
Fall or spring, 3 credits

THR 346 Advanced Stage Lighting

Advanced topics in lighting design intended to acquaint the student with highly specialized lighting genres. Subjects will include lighting for repertory theatres, the dance, and musical theatre. This is strictly a studio design course.

Prerequisites: THR 246; permission of instructor
Spring, 3 credits

THR 349 The Creative Process in the Fine Arts

An examination of the creative process and its philosophical foundations in Western culture. Students will explore highlights of the philosophical tradition since Plato, attend exhibits, rehearsals, and performances, and discuss with visiting artists their work and its sources. Crosslisted with ARH 349 and MUS 349.

Prerequisites: One philosophy course; ARH 101 or 102 or 110 or MUS 101 or 119 or THR 101 or 104
Fall or spring, 3 credits

THR 352 Acting IV

Advanced scene study. Scenes that represent different acting styles will be chosen from the repertoire. Work will involve exploration of the manners, costume, movement, and attitudes of the time; and techniques for effective staging and acting.

Prerequisites: THR 322; permission of instructor
Fall or spring, 3 credits

THR 354 Special Topics

In-depth study of a specific subject in the history, theory, aesthetics, criticism, dramaturgy, or the dramatic tradition of the theatre, such as: the epic theatre tradition; medieval and Renaissance criticism; methods of reading plays; analyses of dramatic texts; notions of the absurd from Aristophanes to Brecht. May be repeated.

Prerequisite: THR 281 or 282
Schedule to be announced, 3 credits

THR 356 Stage Design II

Principles of design for the theatre including color composition and rendering techniques. These techniques are related to the

aesthetics of dramatic composition and the flexibility of modern staging.

Prerequisites: THR 256; permission of instructor
Spring, 3 credits

THR 362 Advanced Acting: Film and Video

An exploration of the theory and technique of film and video performance. For advanced acting students who have had both classroom and on-stage production experience.

Prerequisites: THR 117, 322; permission of instructor

Fall or spring, 3 credits

THR 371 Techniques of Film Production

Planning and executing short films. Students may make their own films or assist a more advanced filmmaker at the discretion of the instructor. Necessary technical skills will be covered.

Prerequisites: THR 217; permission of instructor

Fall, 3 credits

THR 372 Filmmaking Workshop

Advanced technical skills and practical experience in the planning and production of motion pictures. 16mm equipment will be used.

Prerequisites: THR 371; permission of instructor

Spring, 3 credits

THR 375 Television Studio Production

Planning, writing, analysis, rehearsal, production, recording, and critique of television programs. Students will practice studio lighting, camera operation, switching, audio production, electronic editing, and television directing. Films and tapes of professional productions will be studied.

Prerequisites: THR 272; permission of instructor

Fall or spring, 3 credits

THR 376 Video Production Workshop

Creation of one or more television productions (single or multi-camera) with the aim of meeting broadcast standards. Students will script, produce, direct, engineer, and edit these productions.

Prerequisites: THR 375; permission of instructor

Spring, 3 credits

THR 377 The Media Industry

A seminar in which the interlocking structure of media production firms, advertising agencies, sponsors, broadcasters, and cable and satellite operators is examined. Among the many political and social issues arising from the making and distribution of media which will be considered is the effect of this structure on a democratic society's need for a free exchange of opinion and information.

Prerequisites: Upper-division standing; 9 credits in media arts minor

Spring, 3 credits

THR 401 Senior Seminar I

A seminar in current theatrical theory and practice. Major classical, Renaissance, and contemporary theorists may be examined, such as Aristotle, Tillyard, Artaud, Brook, and Grotowski.

Prerequisites: Senior standing in theatre arts major or history and theory minor in theatre arts

Fall, 3 credits

THR 402 Senior Seminar II

An intensive investigation of one or more dramatic theorists with particular emphasis on the application of theory to practice.

Prerequisites: Senior standing in theatre arts major or history and theory minor in theatre arts

Spring, 3 credits

THR 403 Media Theory and Criticism

Seminal essays in film theory from Eisenstein to Metz as well as recent developments in video aesthetics. Critical approaches to both film and video are compared and evaluated.

Prerequisites: Upper-division standing; 12 credits in media arts minor

Spring, 3 credits

THR 475 Undergraduate Teaching Practicum I

Each student will be responsible for some aspect of a course, depending on his or her particular skills. The student will receive regularly scheduled supervision from the instructor. Responsibilities may include preparing material for discussion, keeping records, helping students with their projects, and holding regular office hours.

Satisfactory/Unsatisfactory grading only. May not be used to fulfill requirements for major.

Prerequisites: Theatre arts major; senior standing; permission of instructor and department

Fall and spring, 3 credits

THR 476 Undergraduate Teaching Practicum II

Further training in the teaching of theatre courses. Either increased or different responsibilities will be assigned, adding to the quality of academic experience already gained in THR 475.

Satisfactory/Unsatisfactory grading only. May not be used to fulfill requirements for major.

Prerequisites: THR 475; permission of instructor and department

Fall and spring, 3 credits

Projects Courses and Internship

Applications for projects courses must be submitted by the end of the Advanced Registration period. Students may take no more than six credits of projects courses (481-487 and 489). Applications and guidelines are available in the department office.

THR 481 Projects in Production Management

Advanced work on a particular problem in theatre management under close faculty supervision.

Prerequisites: THR 336; permission of department

Fall and spring, 3 credits

THR 482 Projects in Performance

Advanced work on a particular problem in performance under faculty supervision. May be the preparation of a major role to be presented before an audience either on or off campus.

Prerequisites: THR 352; permission of department

Fall and spring, 1 to 3 credits

THR 483 Projects in Theatrical Design

Advanced work in theatrical design: costumes sets, or lights.

Prerequisites: THR 323 or 346 or 356; permission of department

Fall and spring, 1 to 3 credits

THR 484 Projects in Theatre History, Theory, Literature, and Criticism

Advanced work on a specific problem related to theatre history, dramatic literature, dramatic theory, or criticism.

Prerequisites: THR 354; permission of department

Fall and spring, 1 to 3 credits

THR 485 Projects in Script Writing

Advanced work resulting in a script for stage, screen, or television.

Prerequisites: THR 325 or 326; permission of department

Fall and spring, 1 to 3 credits

THR 486 Projects in Technical Theatre

Advanced work on some phase of technical theatre, for example the design and execution of a lighting plot or the design for a new theatre, including floor plans and elevations.

Prerequisites: THR 316 or 346; permission of department

Fall and spring, 1 to 3 credits

THR 487 Projects in Media

Advanced work in film, television, or radio resulting in either a scholarly paper, film footage, or the production of a broadcast program, a tape of which must be supplied.

Prerequisites: THR 372 or 375; permission of department

Fall and spring, 1 to 6 credits

THR 488 Internship

Participation in a professional organization that creates and presents public performances, creates and presents to the public works in the media arts, or concerns itself with the management or funding of arts organizations. Students will be required to submit written progress reports to their department sponsors and a final written report to the department faculty.

Supplementary reading may be assigned.

Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits.

Prerequisites: Permission of instructor, department, and Office of Undergraduate Studies

Fall and spring, 3 to 12 credits

THR 489 Projects in Directing

Advanced work on a comprehensive directorial problem involving actual production performance before an audience on or off campus.

Prerequisites: THR 339; permission of department

Fall and spring, 1 to 3 credits

Unaffiliated Courses

The courses listed in this section are offered for their general interest to students rather than as a part of any major or minor program. Courses with the designators AIM, EXT, and INT do not satisfy distribution requirements. The designators HUM, SBS, and SCI indicate interdisciplinary courses focused primarily on the arts and humanities, the social and behavioral sciences, and the natural and mathematical sciences, respectively; these courses satisfy distribution requirements. A student who wishes to use any of these courses to fulfill the requirements of a major or minor program should apply to the department or other agency that supervises the program.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

For Elective Credit Only**AIM 102 Textual Analysis**

Training in analysis of college-level texts.

Prerequisite: Placement by English Placement Examination

Corequisite: EGC 100

Fall and spring, 3 credits

AIM 103 The Learning Process

Understanding the methods of acquiring knowledge, retaining and processing information, and using and disseminating information effectively. Topics include effective time use, psychological factors influencing learning, the learning process, and developing logical thinking.

Fall and spring, 3 credits

AIM 104 Research Paper Techniques
(formerly AIM 101)

An introduction to basic research techniques with emphasis on understanding and use of library facilities, analysis and development of research topics, documentation requirements and techniques, organization of information, and writing techniques.

Fall or spring, 3 credits

EXT 488 Internship

Participation in public and private agencies and organizations under the supervision of a faculty sponsor. Students will be required to submit progress reports and a final written report on their experience to the faculty sponsor. Satisfactory/Unsatisfactory grading only. May be repeated up to a limit of 12 credits. Students taking nine or more credits must take a related campus-based seminar.

Prerequisites: Acceptance by faculty sponsor; approval of appropriate department and Office of Undergraduate Studies

Fall and spring, 3 to 12 credits

EXT 489 Washington Internship

Participation in the Washington Center for Learning Alternatives (W.C.L.A.) as interns in private or public organizations and agencies. Students will be supervised by selected practitioners within the organization or

agency. Students will be required to submit journals of experience and observation. Satisfactory/Unsatisfactory grading only.

Prerequisites: Admission to W.C.L.A.; sponsorship of a faculty member; approval of appropriate department and Office of Undergraduate Studies

Corequisite: EXT 490

Fall and spring, 3 credits

EXT 490 Washington Seminar

Seminar offered in Washington as part of the internship program of the Washington Center for Learning Alternatives (W.C.L.A.). The seminars are taught by people in public and private organizations. Seminar topics include law and justice, policy studies, community-urban service, and studies in government.

Prerequisites: Admission to W.C.L.A.; sponsorship of a faculty member; approval of appropriate department and Office of Undergraduate Studies

Corequisite: EXT 489

Fall and spring, 3 credits

INT 150 Introduction to the Stony Brook Library

An introduction to basic library skills and bibliographic resources, using a self-paced workbook approach. Topics covered include the use of the card catalogs, periodical indexes and abstracting sources, newspaper indexes, government documents, and current affairs sources. Special emphasis is placed on the Stony Brook Library's organization and resources. No class sessions are held, but opportunity for adequate contact between student and librarian will be provided.

Prerequisite: Freshman or sophomore standing or upper-division transfer students with fewer than 30 Stony Brook credits

Fall and spring, 1 credit

INT 180 Women's World, Women's Place: An Introduction to the University for Re-Entry Students

Designed to help re-entry students adjust to school and, specifically, to Stony Brook. After meeting with counselors, librarians, instructors from the Mathematics Learning Center, and others for several weeks, students will turn to reading and writing in women's studies as a focus for reviving academic skills. Topics of concern to women will be studied from both a historical and contemporary perspective. Discussion will be encouraged as will the writing of several short papers, including a research paper. Written work will receive careful guidance and criticism.

Prerequisite: Open only to students returning to school after at least five years of absence. *Fall, alternate years, 3 credits (not offered in 1985-86)*

INT 200 Career and Life Planning

An introduction to and the development of practical skills in career and life planning. Topics will include the nature of career decision making as a developmental and lifelong process, the psychosocial factors that influence career and life planning, and the issue of education or training in this planning. Students will develop skills in self-assessment, decision making, goal setting, and resource utilization for career and life planning.

Prerequisites: Sophomores only; permission of instructor
Fall and spring, 3 credits

INT 224 The Science Establishment

An examination of the institutions that comprise the science establishment in the United States with emphasis on federal agencies, scientific societies, academic institutions, and industrial research and development laboratories. Three scientific activities will be examined to determine both their scientific content and their impact on society. The economic, social, and political factors that help to determine scientific goals and budgets will be studied. May not be counted toward the College requirement in natural science.

Prerequisite: One introductory course in science

Spring, 5 credits

INT 250 Academic Research

Provides a basic understanding of the information process through the study of classification schemes, research strategies, abstracting, use of indexes and abstracts, reference materials, government documents, monographs, serial literature, and various automated retrieval systems. Should be taken in conjunction with a course requiring a research paper. Fifty-item bibliography required.

Fall and spring, 2 credits

For Distribution Credit**HUM, SBS, SCI 291 Seminar on Contemporary Issues**

These variable-topics courses, designed primarily for lower-division students, will explore contemporary issues in the light of two or more disciplines. Topics explored primarily in the light of disciplines in the humanities will be assigned the HUM designator; those in the natural and mathematical sciences, the SCI designator; and those in the social and behavioral sciences, the SBS designator. Topics will be generated by faculty members or developed in response to student suggestions.

Schedule to be announced, 1 credit each

HUM, SBS, SCI 491 Seminar on Contemporary Issues

These variable-topics courses, designed for upper-division students, will explore contemporary issues in the light of two or more disciplines. Topics explored primarily in the light of disciplines in the humanities will be assigned the HUM designator; those in the natural and mathematical sciences, the SCI designator; and those in the social and behavioral sciences, the SBS designator. Topics will be generated by faculty members or developed in response to student suggestions.

Schedule to be announced, 1 credit each

SBS 360 Death

Lectures and discussions will include the following topics: the evolutionary significance of death, death as a social process, death and a philosophy of life, the fear of death, death in other cultures, and the rhetoric of death.

Alternate years, 3 credits (not offered in 1985-86)

Women's Studies

Minor Coordinator

Beverly Birns: Social Sciences Interdisciplinary

and achievements. The minor consists of courses offered by the Interdisciplinary Program in Social Sciences as well as courses in the social and behavioral sciences, the humanities, and the health sciences. Students wishing to elect this minor may major in any discipline; they should consult the women's studies program coordinator and establish an advisement folder by the beginning of the junior year. The women's studies program is administered by the Interdisciplinary program in Social Sciences.

Requirements for the Minor in Women's Studies

The minor in women's studies may also be taken as a field of concentration for students within the social sciences major. Courses must be taken from at least two departments other than SSI and at least nine credits must be in upper-division courses.

The women's studies minor (WNS) is designed for students interested in the interdisciplinary study of women's roles

	<i>Credits</i>
1. SSI 102 Introduction to Women's Studies	3
2. SSI 407 Senior Seminar in Women's Studies	3
3. One of the following:	2-3
AMS 102 Elements of Statistics	
CSE 113 Introduction to Computer Science	
PSY 201 Statistical Methods in Psychology	
SOC 201 Research Methods in Sociology	
SOC 202 Statistical Methods in Sociology	
4. At least nine credits chosen from the <i>core</i> courses, listed below	9
5. Two additional courses to be chosen from either <i>core</i> or related courses	6
Total	23-24

Note: No more than one course may be taken for Pass/No Credit.

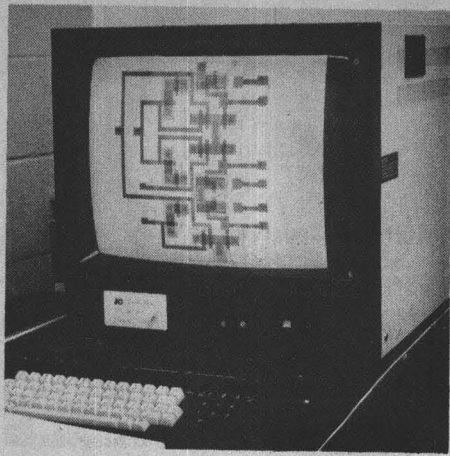
Core Courses

AFS 275	Black Women and Social Change: A Cross-Cultural Perspective
AFS 370	The Black Family
ANT 355	Legal Anthropology
ANT 367	Male and Female
EGL 276	Women and Literature
HIS 316	The Healer and the Witch in History
HIS 360	Women in Premodern Europe
HWC 325	Women and Health Care
PHI 384	Philosophy and Feminism
SOC 247	Women and Men
SOC 304	Sociology of the Family
SSI 103	Social and Historical Perspectives on Childhood
SSI 305	Children and the Family: Contemporary Issues
SSI 307	Psychology of Women
SSI 333	Women in U.S. History
SSI 344	Women, Work, and the Family in Modern European History
SSI 405	Seminar in Children and Social Policy

Related Courses

ANT 354	Family and Kinship
HIS 369	American Social History to 1860
HIS 370	U.S. Social History, 1860-1929
HUM 122	Images of Women in Literature
PSY 209	Social Psychology
SOC 204	Courtship and Marriage
SOC 370	Work and the Professions
SOC 380	Social Psychology

Each semester various special topics courses focusing on women are given in individual departments. Check with the women's studies coordinator to determine which are eligible for the minor.



College of Engineering and Applied Sciences

Programs in Engineering and Applied Sciences

Engineering and applied sciences deal with the problems of the real world. This requires a broad-based knowledge of mathematics and the sciences supplemented by deeper training in a specific technical discipline. In addition, these problems often have social, political, economic, and legal aspects that must be considered in formulating a workable solution. The process of choosing between options—weighing technical and societal requirements—calls for an understanding and judgment of these often conflicting needs that is developed in part from a study of the humanities and social and behavioral sciences. Consequently, the engineering and applied science programs include the development of educational experiences in both the technical areas and the humanities and social and behavioral sciences.

In order to realize these objectives, the engineering and applied sciences curriculum is much more flexible than at many other schools. The student who specializes in a particular field such as electrical, mechanical, or materials engineering, as well as applied mathematics and computer science, may plan an interdisciplinary program specifically adapted to his or her career goals involving other departments or divisions of the University; he or she may choose a program of breadth as preparation for

later specialization in architecture, business, law, or medicine. In all of these paths there is strong emphasis on individual projects in the junior and senior years when students are encouraged to work closely with members of the faculty on projects of interest to the students.

The College of Engineering and Applied Sciences offers five different majors, listed below, and, in collaboration with the College of Arts and Sciences, offers a Bachelor of Science with a major in Engineering Chemistry.

Bachelor of Science in:
Applied Mathematics and Statistics
Computer Science

Bachelor of Engineering in:
Engineering Science
Electrical Engineering
Mechanical Engineering

Each student is enrolled in one of these six majors. There is, in addition, great flexibility for specialization toward desired careers because of the freedom provided by electives within any of the six majors. Thus, the student may decide to emphasize: *computer engineering* within electrical engineering; *materials science* within engineering science by choice of electives offered by the Department of Materials Science and Engineering, or within the major in mechanical engineering; *structural engineering* within the major in engineering science with courses offered by the Department of Mechanical Engineering and the Department of Applied Mathematics and Statistics.

In addition, the engineering student often prepares for graduate studies in architecture, business, law, or medicine. Interested students should consult with the appropriate faculty advisor for each profession:

Architecture: Dean Stewart Harris
 Law: Prof. Sheldon S.L. Chang
 Medicine: Prof. Velio A. Marsocci

Industrial Management/Pre-Business:
 Students interested in pursuing careers in management or in continuing on to a graduate degree in business administration are advised to take the following sequence of elective courses:

ECO 101 Introduction to Economics
 ECO 114 Financial Accounting
 ECO 214 Managerial Accounting
 EST 392 Engineering and Managerial Economics
 AMS 310 Survey of Probability and Statistics
 AMS 341, 342 Operations Research I, II

Substitutions for these suggested courses as well as additional courses should be chosen in consultation with the undergraduate program advisor of the Department of Applied Mathematics and Statistics. Students should also consider the business minor, p. 80.

Accreditation

All three undergraduate engineering degree programs offered by the College are accredited by the Accreditation Board for Engineering and Technology, Inc.

Physical Facilities

The College of Engineering and Applied Sciences houses several specialized laboratories for undergraduate students. The Engineering Laboratory contains many small-scale, table-top experiments that provide students with experience in planning and designing more advanced engineering experiments. The Mechanical Engineering Laboratory is a unique departmental facility pertaining to basic mechanical engineering practice and includes equipment for the measurement of stress and strain, fluid flow rates, static and dynamic pressures, and temperature and heat transfer rates. The Department of Electrical Engineering has several laboratories for undergraduate students in the areas of electrical circuits and

electronics, microprocessors and programmed logic, and digital systems. A student machine shop is also available for students who have completed a course in machine shop practice and safety.

Acceptance to College of Engineering and Applied Sciences Programs

Applied Mathematics and Statistics:
 Freshman and transfer applicants to the University may be accepted directly into the major in applied mathematics and statistics. Those who did not apply for the major and those who were not accepted into the major when they entered the University may apply only after completion of a prescribed set of courses (see p. 202).

Computer Science: A limited number of high-achieving freshman applicants, who must specify their interest on their application, will be accepted into the computer science major upon admission to the University. Other students must complete a prescribed set of courses before acceptance into the major (see p. 205). Transfer students may apply only after completing at least one semester.

Engineering: Freshman and transfer applicants to the University may be accepted directly into the electrical engineering, mechanical engineering, or engineering science major; however, they must specify their interest at the time they apply; admission to the University *does not* guarantee acceptance into these three programs. Applicants admitted to the University but not immediately accepted into the engineering science or the mechanical engineering major may apply for acceptance after their first semester. The electrical engineering applicants will be considered after two semesters at Stony Brook. For further details about acceptance into the electrical engineering major, see p. 210.

All majors in the College of Engineering and Applied Sciences currently limit the number of students accepted, in accordance with the University policy outlined on page 41, "Limitation of Acceptance into Majors." The University considers, when

appropriate, personal circumstances, experiences, and academic background that may allow for exceptions to normal acceptance criteria.

Two Baccalaureate Degrees

Qualified students whose special interests and career plans make such study appropriate may be granted permission to earn two degrees at the undergraduate level by planning a program which leads to a Bachelor of Engineering degree and either a Bachelor of Arts or a Bachelor of Science degree in the College of Arts and Sciences. For details see p. 43.

B.E./M.S. Program

An engineering student may apply for admission to enter this special program, which will lead to a Master of Science degree and a Bachelor of Engineering degree at the end of the fifth year. For details, see the individual department sections.

An applied mathematics and statistics student may apply at the end of the junior year for admission to a special program that will lead to a Bachelor of Science degree and a Master of Science degree at the end of the fifth year. For details see p. 202.

Degree Requirements

All candidates for the Bachelor of Engineering or the Bachelor of Science degree must satisfy the University graduation requirements, the College distribution requirements, and the requirements of a declared major. Candidates for the Bachelor of Engineering degree must also satisfy the College residence requirements.

University Graduation Requirements*

Credit Hour Requirement

At least 120 credits for the Bachelor of Science degree and at least 128 credits for the Bachelor of Engineering degree must have been completed. Restrictions on credits that may be counted are stated in "Restrictions on Credits," p. 200, and "Course Credits and Prerequisites," p. 55.

*See also footnote, p. 39, for information about forthcoming additional University Graduation Requirements.

Note: At least 80 percent of all credits taken at Stony Brook, including F, U, and NC courses (but excluding courses in which a W is received) must be taken for a letter grade. (See also "Satisfactory/Unsatisfactory Grading," p. 41.)

Grade Point Average Requirement

At least 2.00 cumulative grade point average must have been achieved for all courses taken at Stony Brook.

Residence Requirement

At least 36 credits must have been earned at Stony Brook beginning with the 58th credit.

Upper-Division Credit Requirement

At least 39 credits of courses numbered 300 or higher must have been completed. Some of these credits may have been earned through courses transferred from other colleges and individually evaluated at Stony Brook as upper division. See p. 19, "Transfer Credit Policy."

Writing Requirement

This requirement assumes that instruction in writing is a central part of a university education. Therefore, all students will take at least one university course in writing—even if they already have strong high school skills and even if they write copiously in other university courses.

All students must take a diagnostic placement examination upon entry and begin their writing requirement during their first two semesters at Stony Brook. Students who receive a grade of C- or lower in EGC 101 must repeat that course in the following semester. Students who are assigned to preparatory courses must take those courses in sequence in successive semesters until they have satisfied the writing requirement.

Placement will be indicated on the student's record in the following way:

Placement 1 refers to students who score "Weak" and are required to pass an ESL course, followed by EGC 100, and then to pass EGC 101 with a grade of C or higher.

Placement 2 refers to students who score "Weak" and are required to pass EGC 100 and then to pass EGC 101 with a grade of C or higher.

Placement 3 refers to students who score "Satisfactory" as to their preparation for college composition study and are required to pass EGC 101 with a grade of C or higher.

Placement 4 refers to students who score "Strong" and are required to pass any Designated Advanced Writing Course.

FRESHMEN

Freshmen who score "Strong" on the placement examination may choose among the designated advanced writing courses (below). If they score "Satisfactory," they will be placed in EGC 101. If they score "Weak," they will be placed in EGC 100 or an ESL course. Students scored "Weak" may not take EGC 101 until they do satisfactory work in the preparatory course.

To satisfy the University Writing Requirement, all freshmen must take EGC 101 for a letter grade and earn a grade of C or higher, or pass one of the designated advanced writing courses. Those freshmen whose writing skills are weak will have to take more than one writing course, since they must take at least one preparatory course before EGC 101.

TRANSFERS

Transfer students who score "Strong" on the placement examination and have already taken a course judged equivalent to Stony Brook's EGC 101 or one of the designated advanced writing courses will have satisfied this requirement. If they score "Strong" but do not bring credit for an equivalent of EGC 101 or one of the designated advanced writing courses (below), they may choose among the designated advanced writing courses and pass one to satisfy this requirement. If they score "Satisfactory," they will be placed in EGC 101, which must be taken for a letter grade and passed with a grade of "C" or higher. Those transfer students who score "Weak" on the placement examination must take EGC 100 or an ESL course and go on to EGC 101, which must be taken for a letter grade and passed with a grade of "C" or higher to satisfy this requirement.

Designated Advanced Writing Courses.

Designated advanced writing courses may be offered by any academic department. The guidelines

under which such courses are approved include the following:

- the course should have a maximum of 30 students per section;
- some writing should be handed in each week;
- the course need not focus on the teaching of writing but considerable attention should be paid to it;
- grades should take writing ability into account.

Designated Advanced Writing Courses are: EGC 102; EGL 191, 192, 193, 199, 202, 204; HIS 214; JDH/RLS 230; PHI 100, 103, 104, 105, 108; RLS 150.

College Distribution Requirements

Distribution requirements are normally met by attaining a passing grade in appropriate courses. Up to four credits required in each area, however, may be filled by AP, CPE, CLEP, or Challenge credit or other approved credit by examination. For details, see p. 44. All courses taken to meet the College Distribution Requirements may be taken for P/NC.

Students who enter the College with an undergraduate degree in an arts and humanities or a social and behavioral sciences discipline will have met this requirement.

A. Eighteen Credits in the arts humanities and social and behavioral sciences chosen to meet the following minima:

1. Nine credits of arts and humanities.
2. Nine credits of social and behavioral sciences.
3. At least two of the courses taken to meet 1 and 2 together must be at the 200 level or higher.

B. Courses are to be chosen from the following:

Arts and Humanities

Art (ARH and ARS), classics (CLS), comparative literature (CLT), English (EGL—but not EGC), foreign languages (CHI, EEL, FLA, FRN, GER, GRK, HBW, ITL, LAN, LAT, POR, PSH, RUS, SKT, SPN, SWE, YDH—but not courses numbered 111-116), humanities interdisciplinary (HUM), music (MUS), philosophy (PHI), religious studies (RLS), and theatre arts (THR). Also, Incoming Student Seminars designated ISH,

Africana studies courses designated AFH, Judaic studies courses designated JDH, certain Health Sciences Center courses (HMC 200, 331), and EST 390.

Social and Behavioral Sciences

Anthropology (ANT), economics (ECO), history (HIS), interdisciplinary social sciences (SBS and SSI—but not 283), linguistics (LIN), political science (POL), psychology (PSY—but not 283), and sociology (SOC). Also, Incoming Student Seminars designated ISS, Africana studies courses designated AFS (but not 283), and Judaic studies courses designated JDS.

Other Distribution Credits

Sometimes Independent Study Program and Foreign Study courses (ISP, FSC, FSD, FSF, FSG, FSI, FSJ) may satisfy distribution requirements. These must be evaluated for each student individually.

Courses may not be chosen from the following categories:

1. Proficiency-level courses: AIM, ESL, EGC, MAP.
2. Federated Learning Communities core courses, program seminars, and independent projects: ATS, EPP, EPS, FLC, LIS, NTR, SEI, WPT, etc. Some other excluded designators in this category appeared in earlier editions of the *Undergraduate Bulletin* and others will be announced as new Federated Learning Communities are developed.
3. Certain interdisciplinary courses: INT.
4. Physical Education courses: PEC.
5. Elementary foreign language courses: Numbered 111 through 116.
6. Community service and day care courses: AFS, PSY, and SSI 283.

College Residence Requirements for the B.E. Degree

At least seven ESG courses and/or approved technical elective courses offered by the College must have been completed. Of these seven, at least five must be courses offered by the department of the student's major and included in its section of technical elective course descriptions. ESG 211, 312, 313-318, ESC, ESE, ESG 440 and 441 may not be used to meet this requirement. ESC, ESE, ESG 440 and 441 must be taken at Stony Brook.

College Time Limits for the Bachelor of Engineering and Bachelor of Science Degrees

All degree requirements for either the Bachelor of Engineering degree or the Bachelor of Science degree must be met in 11 semesters by students classified as full time. Full-time transfer students who enter Stony Brook in Fall 1986 and after must meet all degree requirements in the number of semesters remaining according to the following formula: the number of transferred degree-related credits is divided by 12 (which is the minimum number of credits a full-time student may take in a semester) to determine the number of semesters already completed. The result is subtracted from 11 (semesters) to indicate the number of remaining semesters permitted for completion of degree requirements.

Technical Electives

Any courses offered by the College of Engineering and Applied Sciences and listed as technical electives, or recommended by a student's advisor as appropriate to his or her academic program and approved by the student's major department chairperson, will satisfy technical elective requirements.

Open Electives

Any courses offered for credit at this University, and any credits accepted as transfer credits are open electives.

Permission to Take Graduate Courses

Undergraduates with superior academic records may take graduate courses if they receive the permission of the course instructor and of their academic advisor. Forms are available in the Engineering Undergraduate Student Office.

Graduate courses taken while a student is an undergraduate remain part of the undergraduate record. The student cannot subsequently receive graduate credit for such courses, except in the case of approved five-year programs leading simultaneously to a baccalaureate and a master's degree.

Restrictions on Credits

Only courses stating in the description that they may be repeated may be

taken more than once for credit. Only three credits of physical education may be counted toward degree requirements.

Restrictions on Transfer Credits

Courses taken at other universities and colleges and graded below C (2.00) will not be transferred as meeting either College distribution requirements or major requirements.

Courses taken at other universities and colleges in a technology curriculum will not be transferred as meeting technical elective requirements.

Course Prerequisites

Certain courses may be taken only with the permission of the instructor or of the department; this is listed as a prerequisite for the course. For courses with specific course prerequisites, "or permission of instructor" is always understood. That is, a student who thinks he or she has acquired the knowledge necessary for the course through means other than taking the listed prerequisites may ask the instructor's permission to take the course. Instructors have the option of deregistering students who have enrolled without proper prerequisites or permission.

Course Numbering

Courses are numbered in accordance with the following general pattern:

100-199 Introductory courses; appropriate for and generally taken by freshmen.

200-299 Intermediate courses; appropriate for and generally taken by sophomores.

300-399 Upper-division courses; appropriate for and generally taken by juniors and seniors.

400-499 Special upper-division courses such as seminars, directed readings and research, and teaching practica; appropriate for and generally taken by juniors and seniors. Certain 400-level courses for seniors only are so specified.

Course Load: 12 to 19 Credits

College of Engineering and Applied Sciences majors who are full-time students cannot register for fewer than 12 credits nor more than 19 credits without the approval of the Committee on Academic Standing and Appeals.

Department of Applied Mathematics and Statistics

Professors

Michel L. Balinski, Ph.D., Princeton University: Operations Research.

Edward J. Beltrami, Ph.D., Adelphi University: Optimization and stochastic models.

Yung Ming Chen, Ph.D., New York University: Partial differential equations and inverse problems.

Daniel Dicker, Sc.D., Columbia University: Boundary value problems of solid and fluid mechanics.

Vaclav Dolezal, Sc.D., Czechoslovak Academy of Science: Distribution theory; systems theory.

Irving Gerst, Emeritus, Ph.D., Columbia University: Applied algebra and number theory.

Ellis Johnson, Ph.D., University of California, Berkeley: Operations research; programming networks.

Ram P. Srivastav, D.Sc., University of Glasgow; Ph.D., University of Lucknow: Integral equations and numerical solutions.

Reginald P. Tewarson, Ph.D., Boston University: Numerical analysis and biomathematics.

Alan C. Tucker, Chairperson, Ph.D., Stanford University: Combinatorics and applied models. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74.

Associate Professors

Stephen Finch, Ph.D., Princeton University: Applied statistics.

Woo Jong Kim, Ph.D., Carnegie Institute of Technology; Ph.D., Carnegie-Mellon University: Ordinary differential equations.

Nancy Mendell, Ph.D., University of North Carolina at Chapel Hill: Biostatistics; statistical genetics.

Assistant Professors

Laurence Baxter, Ph.D., University of London: Reliability theory and statistics.

Thomas Hagstrom, Ph.D., California Institute of Technology: Numerical analysis.

Nancy Heckman, Ph.D., University of Michigan: Statistics.

David Jensen, Ph.D., Cornell University: Operations research.

Michael Katehakis, Ph.D., Columbia University: Operations research.

Lynn Kuo, Ph.D., University of California, Los Angeles: Statistics.

Cunhui Zhang, Ph.D., Columbia University: Statistics.

Teaching Assistants

Estimated number: 18

The undergraduate program in applied mathematics and statistics aims to give mathematically oriented students a liberal education in quantitative problem solving. The courses in this program survey a wide variety of mathematical theories and techniques that are currently employed by analysts and researchers in government, industry, and science. About half of the applied mathematics majors go on to graduate or professional schools, largely in statistics, operations research, computer science, and business management. Many of the applied mathematics courses give students the opportunity to develop problem-solving techniques using campus computing facilities. Others go directly into professional careers as actuaries, programmer-analysts, management trainees, and secondary school teachers. While some career-oriented course sequences are listed below, students are strongly encouraged to seek faculty advice in coordinating their career plans with their academic programs. In the spring of their junior year, all students contemplating graduate studies, upon graduation or at a later date, should consult with the AMS Graduate Placement Advisor, who will assist them in choice of schools and provide information about Graduate Record Examinations, etc. Students considering secondary school mathematics teaching can major in

Applied Mathematics and Statistics or in Mathematics.

Requirements for the Major in Applied Mathematics and Statistics—Bachelor of Science Degree

In addition to the University graduation requirements and the College of Engineering and Applied Sciences distribution requirements, the following courses are required for the major in applied mathematics and statistics:

- | | <i>Credits</i> |
|--|----------------|
| 1. MAT 131, 132 (or 125, 126, 127 or 141, 142); AMS 210 or MAT 231 or 241, and MAT 306 or 307 | 14-15 |
| 2. CSE 111 or 113 and 114 | 3-5 |
| 3. 24 credits of 300-level and above AMS courses including AMS 301 and either AMS 310 or AMS 311 and 312. A student who has taken ECO 320 may substitute that as an exact equivalent to AMS 310 in the above requirements. (A maximum of 6 of these 24 credits may be replaced by an equal number of credits taken from approved junior-level or higher mathematically oriented courses. Typically approved substitutions are ECO 321, ECO 348, and all courses designated CSE or MAT and numbered 301 and above, but not MAT 306 or 307.) | 24 |
| 4. To gain a background in fields that generate mathematical applications, a minimum of 14 additional credits shall be chosen from among the course offerings in economics, the natural sciences, and engineering. Courses taken to satisfy item 3 above may not be used to satisfy this requirement. No more than 8 of these credits may come from any one department. | 14 |

Total 55-58

Acceptance into the Major

Freshman and transfer applicants to the University may be accepted directly into the major in applied mathematics and statistics. Those who did not apply for the major and those who were not accepted into the major when they entered the University may apply only after completion of MAT 131, 132 (or 125, 126, 127 or 141, 142); AMS 210 or MAT 231 or 241; and CSE 111 or 114.

Minors and Double Majors

The department urges students in other majors who are considering a double major with AMS first to select individual AMS courses on the basis of their academic interests or vocational needs. Only after a student has taken several AMS courses should he or she decide on this as a second major.

On the other hand, AMS students are strongly encouraged to minor or double major in another discipline. The most frequent choices of AMS double majors are computer science and economics. A student majoring in both AMS and CSE must satisfy the AMS and CSE major requirements, respectively. In addition, the number of 300-level courses in CSE and the number of courses listed in (3) of the AMS major requirements must total at least 36 credits, excluding MAT 306 or 307.

Recommendations for Students Majoring in Applied Mathematics and Statistics

The department encourages students to have a broad exposure to many types of mathematical reasoning and to its diverse roles in the social and natural sciences. During their first two years, students considering an AMS major are encouraged to take, besides the required calculus sequence, some physics (either PHY 131, 132 or 101, 102 or 103, 104), CSE 111 or 113 and 114, and one other computer course (competence in computer programming is essential for many professional careers), and some economics. At the end of the sophomore year or the beginning of the junior year, students begin taking upper-division AMS courses, usually starting with AMS 301 and 310. At the same time, they are

strongly encouraged to continue taking MAT and CSE courses and mathematically oriented courses in other departments, such as ECO 251. The following list of course sequences for certain professions is given as a preliminary guide to students with interests in these professions. Students should talk with faculty members specializing in these areas as early as possible for more specific information.

Statistics: AMS 301, 310, 311, 312, another CSE course beyond 111 or 114; students considering highly competitive graduate statistics programs need MAT 310 or 313, and 320 or 324.

Actuarial Science: Preparation for second actuarial examination—AMS 301, 310, 311, and 312; third actuarial examination—AMS 326, 341, and 342.

Operations Research or Management Science: AMS 301, 310, 311, 331, 341, and 342.

Analyst-Programmer: AMS 301, 310, 311, 320, 326, 341, and CSE 120, 201, and 301.

Pass/No Credit Grading

The department will not accept P grades for courses listed under 1, 2, and 3 above.

Bachelor of Science/Master of Science Program in Applied Mathematics and Statistics

An applied mathematics and statistics major may apply at the end of the junior year for admission to a special program that will lead to the Bachelor of Science and Master of Science degrees at the end of the fifth year. In the fourth and fifth years, in addition to completing the 120 credits for the B.S. degree requirements, the student will take 30 graduate credits to fulfill the master's requirements in one of the department's three areas of study: applied mathematics, operations research, or statistics. It is recommended that a five-year master's student take MAT 324. This course provides the necessary background in analysis.

The advantage of the combined program is that the M.S. degree can be earned in less time than that required by the traditional course of study. The M.S. degree in Applied Mathematics and Statistics normally requires three to four semesters of study after completion

of a bachelor's degree. The in-depth training of a master's degree is required by many employers for professional positions in applied mathematics and statistics (beyond beginning analyst/programmer jobs).

For more details about the B.S./M.S. program, see the Graduate Program Director in the Department of Applied Mathematics and Statistics or the Director of Undergraduate Studies.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

AMS 101 Introduction to Finite Mathematics

Mathematical concepts and techniques needed for the mathematical models currently being used in such fields as anthropology, biology, economics, linguistics, psychology, and sociology. Topics to be covered include set theory, combinatorics, finite probability, matrix algebra, Markov chains, game theory, and interest theory. May not be taken by students with credit for MAT 127 or 132 or 142. Students may not receive credit for both AMS 101 and AMS 110.

Fall and spring, 3 credits

AMS 102 Elements of Statistics

The use and misuse of statistics in real-life situations; basic statistical measures of central tendency and of dispersion, frequency distributions, elements of probability, binomial and normal distributions, small- and large-sample hypothesis testing, confidence intervals, chi-square test, and regression. May not be taken by students with credit for MAT 231, MAT 241, AMS 210, AMS 310, AMS 311, AMS 312, ECO 320, PSY 201, SOC 202, SOC 211-212. *Prerequisite:* Satisfaction of Arts and Sciences mathematics proficiency requirement

Fall and spring, 3 credits

AMS 110 Probability and Statistics in the Life Sciences

A survey of probability theory and statistical techniques with applications to biological and biomedical situations. Topics covered include Markov chain models, binomial, Poisson, normal, exponential and chi-square random variables, tests of hypotheses, confidence intervals, t-tests, analysis of variance, regression, and contingency tables. Credit cannot be given for both AMS 101 and 110. *Prerequisite:* MAT 126 or 131 or 141

Fall and spring, 3 credits

AMS 194 Patterns of Problem Solving

A survey of techniques and methods of problem solving as developed by the engineer and applied scientist. Applications drawn from a broad range of fields. Primarily intended for non-engineering majors. Crosslisted with EST 194.
Spring, 3 credits

AMS 210 Linear Models

An introduction to linear models and associate matrix theory, which simultaneously serves as an introduction to applied mathematics. Models include Markov chains and related probability models, regression, economic input-output and ecological growth models, computer graphics, and finite difference methods. Applications drawn from diverse areas of social and natural sciences. Efficient matrix computation and numerical analysis involving programming exercises.
Prerequisites: MAT 126 or 131 or 141; programming experience
Spring, 3 credits

AMS 301 Finite Mathematical Structures

This course introduces the student to graph theory and combinatorial analysis. The emphasis is on solving applied problems rather than on theorems and proofs. Techniques used in problem solving will include generating functions, recurrence relations, and network flows. This course develops the type of mathematical thinking that is fundamental to computer science and operations research.
Prerequisite: AMS 210 or MAT 221 or 231 or 241
Fall, 3 credits

AMS 302 Applied Algebra

Topics in algebra relating to computer science: sets and relations, groups, modular arithmetic, partial orderings, Boolean algebra, error-correcting codes, machine computation, finite state machines. Crosslisted with MAT 312.
Prerequisites: AMS 210 or MAT 221 or 231 or 241
Fall and spring, 3 credits

AMS 310 Survey of Probability and Statistics

A survey of data analysis, probability theory, and statistics. Stem-and-leaf displays, box plots, schematic plots, fitting straight line relationships, discrete and continuous probability distributions, conditional distributions, binomial distribution, normal and t distributions, confidence intervals, and significance tests. AMS 310 may not be taken for credit in addition to ECO 320.
Prerequisite: AMS 210 or MAT 221 or 231 or 241
Fall and spring, 3 credits

AMS 311 Probability Theory

Probability spaces, random variables, moment generating functions, algebra of expectations, conditional and marginal distributions, multivariate distributions, order statistics, law of large numbers.
Corequisite: MAT 306
Fall, 3 credits

AMS 312 Mathematical Statistics

Estimation, confidence intervals, Neyman-Pearson lemma, likelihood ratio test, hypothesis testing, chi-square test, regression, analysis of variance, nonparametric methods.
Prerequisite: AMS 311
Spring, 3 credits

AMS 320 Applied Differential Systems

Properties of ordinary differential equations with diverse applications to problems in the natural and social sciences. (No background in areas of application is required.) The course is designed for students in the mathematical sciences who are interested in basic uses of the calculus.
Prerequisite: AMS 210 or MAT 221 or 231 or 241
Fall, 3 credits

AMS 326 Numerical Analysis

Direct and indirect methods for the solution of linear and nonlinear equations. Computation of eigenvalues and eigenvectors of matrices. Quadrature, differentiation and curve fitting. Numerical solution of ordinary and partial differential equations.
Prerequisites: CSE 111 or 114; AMS 210 or MAT 221 or 231 or 241
Fall and spring, 3 credits

AMS 331 Mathematical Modeling

This course investigates the process of translating real-world problems into mathematical models. Six to eight unconnected problems will be studied in detail. These will be chosen to illustrate various methods of formulation and solution, and will generally find their origins in the social and biological sciences.
Prerequisites: AMS 210 or MAT 221 or 231 or 241; either AMS 310 or 311
Spring, alternate years, 3 credits (not offered in 1986-87)

AMS 341 Operations Research I: Deterministic Models

Linear programming with a view toward its uses in economics and systems analysis. Linear-algebra and geometric foundations of linear programming; simplex method and its variations; primal-dual programs; formulation and interpretation of linear programming models, including practical problems in transportation and production control. Optional computer projects.
Prerequisite: AMS 210 or MAT 221 or 231 or 241; AMS 341 and 342 may be taken in

either order, though it is recommended that AMS 341 be taken first
Spring, 3 credits

AMS 342 Operations Research II: Stochastic Models

Methods and techniques for stochastic modeling and optimization, with applications to queueing theory, Markov chains, inventory theory, games, and decisions.
Prerequisites: AMS 210 or MAT 221 or 231 or 241; AMS 310 or 311 or ECO 320; AMS 341 and 342 may be taken in either order, though it is recommended that AMS 341 be taken first
Fall, 3 credits

AMS 350 Graph Theory

Paths and circuits, trees and tree-based algorithms, graph coloring, digraphs, network flows, matching theory, matroids, and games with graphs.
Prerequisite: AMS 301
Spring, alternate years, 3 credits (not offered in 1985-86)

AMS 361 Engineering Mathematics A

Introduction to partial differential equations of engineering; methods of solution including separation of variables, Fourier series and integrals; elements of numerical analysis.
Prerequisites: C or higher in MAT 221; CSE 111 or 114
Fall and spring, 4 credits

AMS 362 Engineering Mathematics B

Vector and related techniques used in fluid dynamics and electromagnetic fields; methods of complex variables in engineering applications.
Prerequisite: MAT 221 or 231 or 241
Fall and spring, 4 credits

AMS 373 Analysis of Algorithms

Mathematical analysis of a variety of computer algorithms, including searching, sorting, matrix multiplication, fast Fourier transform, and graph algorithms. Time and space complexity. Upper-bound, lower-bound, and average case analysis. Introduction to NP completeness. Some machine computation will be required for the implementation and comparison of algorithms. Crosslisted with CSE 373 and MAT 373.
Prerequisites: AMS 210 or MAT 221 or 231 or 241; CSE 114; permission of Applied Mathematics and Statistics Department
Fall, 3 credits

AMS 400 Topics in Mathematical Modeling

Topics in mathematical modeling will be offered as student demand and faculty time

and interest coincide. Some possible offerings include population dynamics models, epidemiological models, and demographic models. The emphasis of the course will be on mathematical thinking and methods. May be repeated once.
Prerequisites: AMS 210 or MAT 221 or 231 or 241; AMS 311
Schedule to be announced, 3 credits

AMS 475 Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that will supplement a lecture course. The student will receive regularly scheduled supervision from the faculty advisor. May be used as an open elective only and repeated once.

Prerequisites: Senior standing as an undergraduate major within the College; a minimum grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department
Fall and spring, 3 credits

AMS 487 Research in Applied Mathematics

A course which will give the student an opportunity to be involved in an independent research project with supervision by the faculty. Permission to register will require that students have average grades of B in their courses and that they obtain the agreement of a faculty member to supervise

their research. May be repeated once. Only 3 credits of research electives (AMS 487, CSE 487, ESC 499, ESE 499, ESM 499, EST 499) may be counted toward fulfillment of technical elective requirements.
Prerequisite: Permission of instructor and department
Fall and spring, 3 credits

AMS 491 Workshop in Applied Mathematics

Lectures will be given by the course instructor and by visitors on topics of current interest in applied mathematics. Projects involving mathematical modeling will be undertaken by small groups of students with the supervision of faculty. Reports will be submitted by each group of students at the end of the semester.

Prerequisite: Permission of instructor
Spring, 3 credits

AMS 492 Topics in Applied Mathematics

Treatment of an area of applied mathematics which expands upon the undergraduate curriculum. Topics may include applied mathematics, statistics, or operations research and will change from semester to semester. May be repeated once.

Prerequisite: Permission of instructor
Schedule to be announced, 3 credits

Applied Mathematics and Statistics Courses Approved as Engineering Technical Electives

AMS 301	Finite Mathematical Structures
AMS 302	Applied Algebra
AMS 310	Survey of Probability and Statistics
AMS 311	Probability Theory
AMS 312	Mathematical Statistics
AMS 320	Applied Differential Systems
AMS 326	Numerical Analysis
AMS 331	Mathematical Modeling
AMS 341, 342	Operations Research I, II
AMS 350	Graph Theory
AMS 373	Analysis of Algorithms
AMS 400	Topics in Mathematical Modeling (may be used only once)
AMS 487	Research in Applied Mathematics (may be used only once)
AMS 491	Workshop in Applied Mathematics
AMS 492	Topics in Applied Mathematics

Department of Computer Science

Professors

Arthur J. Bernstein, Acting Chairperson, Ph.D., Columbia University: Operating systems; computer networks.

Herbert L. Gelernter, Ph.D., University of Rochester: Artificial intelligence; scientific applications.

Jack Heller, Ph.D., Polytechnic Institute of Brooklyn: Database systems; office automation.

Zvi M. Kedem, D.Sc., Technion, Israel Institute of Technology: Database systems; computer graphics; algorithm analysis; VLSI algorithms.

David R. Smith, Ph.D., University of Wisconsin: VLSI design; computer architecture; computer systems.

Associate Professors

Peter B. Henderson, Ph.D., Princeton University: Software engineering; programming environments.

David S. Warren, Ph.D., University of Michigan: Database; logic programming; systems.

Larry D. Wittie, Ph.D., University of Wisconsin: Large distributed systems; operating systems; computer networks; topologies.

Alessandro Zorat, Ph.D., University of Southern California: Computer architecture; parallel computation; algorithm analysis; VLSI; computer graphics.

Assistant Professors

Hussein G. Badr, Ph.D., Pennsylvania State University: Operating systems; performance evaluation.

Gael N. Buckley, Ph.D., University of Texas at Austin: Database concurrency control; distributed algorithms.

Alessandro Giacalone, Ph.D., Brown University: Programming environments; graphics.

Jieh Hsiang, Ph.D., University of Illinois: Programming language semantics; theory of computation; program verification.

Michael Kifer, Ph.D., Hebrew University: Database design; logic programming.

Prateek Mishra, Ph.D., University of Utah: Functional programming; programming languages.

I.V. Ramakrishnan, Ph.D., University of Texas at Austin: Computer architecture; parallel processing; VLSI.

Edward Sciore, Ph.D., Princeton University: Database systems; data semantics; programming languages.

Scott C. Smolka, Ph.D., Brown University:
Operating systems; computer networks.

Mandayam K. Srivas, Ph.D., Massachusetts
Institute of Technology: Specification of
software; programming language semantics;
program transformation and synthesis;
theorem proving.

Eugene W. Stark, Ph.D., Massachusetts
Institute of Technology: Programming
language semantics; distributed algorithms.

Lecturers

Nancy J. Duffrin, M.S., State University of
New York at Stony Brook: Computer science
education; programming environments.

David Lingle, M.S., State University of New
York at Stony Brook: Logic programming.

Teaching Assistants

Estimated number: 30

Undergraduate Program in Computer Science

The undergraduate major in computer science is designed to combine a liberal arts program with sufficient pre-professional education in computer science to prepare the student for graduate study or for a career in the computing field. The intent is to offer the breadth of education that will enable students to place computing in the perspective of an extension of man's intellectual power, while offering the depth of education required to understand how to utilize the power of computing.

Students will learn concepts and skills needed for designing, programming, and applying computer systems while learning the theoretical foundation of computer science. They will also have sufficient freedom in the program to pursue other academic interests in the liberal arts, sciences, and engineering to complement their study of computer science. Many students will be able to utilize the flexibility of the program to satisfy the requirements of a second major for the baccalaureate degree.

Physical Facilities

Facilities for undergraduate computing are maintained by the campus Computing Center. The Center operates a UNIVAC 1100/80 mainframe computer and a smaller mid-sized machine for instructional, research, and administrative use; over 150 terminals on campus are available to students.

The Computer Science Department has its own VAX/780, seven VAX/750s, a PDP-11/60, and a PDP 11/24. The department operates several microprocessor-based work stations and graphics stations. These facilities are used for both undergraduate and graduate education and research.

Acceptance into the Major

Except for a limited number of high-achieving freshman applicants who are accepted into the major when they are admitted to the University, students may be accepted into the major in computer science only after one semester of residence at Stony Brook. They also must have completed CSE 113, 114, 120, and 201, and MAT 131, 132, and 231 or 241 (or approved equivalents). Students who achieve a grade point average of at least 2.8 in these courses, with no grade in any of them lower than a C (2.0), are guaranteed acceptance into the major. Students with a lower grade point average may be accepted if space is available. No more than one repeated course may be used to satisfy the requirements for acceptance into the major.

Students wishing to transfer credits for courses equivalent to CSE 113, 114, 120, or 201 must have these transferred courses validated by passing a proficiency examination for each such course with a grade of C (2.0) or higher; the examinations are given in the first week of each semester. When validated, the course will be used toward meeting the requirements for acceptance into the major and as the prerequisite for more advanced courses, where applicable. The original course grade will be used to compute the qualifying grade point average, as well as for certification of the major at graduation.

No transferred upper-division course will be accepted toward meeting the requirements for the major unless prior written approval has been given by a departmental advisor.

Challenge examinations will be offered in the first week of each semester covering the syllabi of CSE 113 and 114 for students who feel that they have mastered the material on their own. A student who passes the examination(s) with a grade(s) of C (2.0) or higher will be awarded the

appropriate credit for the courses, and the grades will be recorded on his or her transcript. The grades will be included in the grade point average of courses required for acceptance into the major in computer science. A student who receives a grade of B or higher on a Challenge examination may elect to take the course instead only if there is space available in the class.

A proficiency examination will be offered in CSE 111 for students who have transfer credit and wish to establish proficiency in FORTRAN programming in order to be admitted to CSE 120. A passing grade is C (2.0) or higher. No credit is awarded for a passing grade.

Requirements for the Major in Computer Science—Bachelor of Science Degree

In addition to the University graduation requirements and the College distribution requirements (p. 198), the following courses are required for the major in computer science. At least three upper-division courses from parts B, C, and D below must be completed at Stony Brook.

A. CSE 113, 114, 120, 201	13
B. Two courses from CSE 304, 306, CSE/ESE 345	6
C. CSE 303 or AMS/ CSE/MAT 373	3
D. Two more CSE upper-division courses (excluding 475)	6
E. MAT 131, 132 (or MAT 125, 126, 127 or 141, 142)	8-9
F. MAT 231 or 241 (CSE/ESE majors may take 221)	3
G. MAT 313	3
H. AMS 301 and 310	6
I. One course from AMS 210, AMS 326, MAT 371	3
J. ESE 218	4
K. One of the following natural science sequences*: BIO 151, 152 CHE 131, 132 GEO 122, 226 GEO 122, 309 PHY 101, 102 PHY 101, AST 203	8
Total	63-64

*Exceptions are students who have already taken more than four credits of natural science courses under the rules outlined in the *Undergraduate Bulletin Supplement*, Fall 1983; they may continue to follow those rules if they so choose.

L. Grading

All courses taken to satisfy requirements A through K *must* be taken for a letter grade and completed with a grade of C (2.0) or higher.

A grade of C or higher is required in prerequisite courses listed for all 300-level computer science courses.

Suggestions for Elective Courses

Students are encouraged to pursue a program that will obtain depth in some area of computer science. The following table lists some typical areas of specialization and relevant electives:

Artificial Intelligence: CSE 304, 307, 352
Database Systems: CSE 301, 305, 306
Hardware: CSE 306, 345, 346, 380
Operating Systems: CSE 306, 307, 345
Programming Languages: CSE 301, 304, 307, 345
Theory: CSE 303, 373; MAT 371

Other courses in the Departments of Mathematics, Applied Mathematics and Statistics, and Electrical Engineering may also be relevant and can be taken as general Stony Brook electives. Also, a large selection of graduate courses in the department's Master of Science program are available to qualified seniors. Students should consult early with faculty members of the Department of Computer Science to plan their programs.

Sample Program (Required Courses Only)

<i>Freshman</i>	<i>Sophomore</i>
CSE 113	CSE 120
MAT 131	MAT 231
	Science elective
	CSE 201
CSE 114	AMS 301
MAT 132	Science elective
<i>Junior</i>	<i>Senior</i>
CSE elective	CSE elective
ESE 218	CSE elective
MAT 313	
CSE elective	CSE elective
AMS 310	
AMS 210 or 326	
or MAT 371	

Admittance to Undergraduate CSE Courses

The criteria for admittance to undergraduate computer science courses are as follows:

- A. For all CSE courses:
 1. Students registered for a course must attend the first two class meetings, or they will be considered for deregistration from the course unless they have made a previous arrangement with the course instructor.
 2. Students seeking to register must attend the first two class meetings to be considered for admission to the course during the add period.
 3. Students must have successfully completed the necessary prerequisite courses, if any, with the required grade (usually C or higher).
 4. Students who have *not* taken the course before will have priority over those students who have taken the course before or have withdrawn from the course previously.

Students who withdrew because of illness that can be documented should bring their documentation to the instructor to reinstate priority.
 5. Students who were on the waiting list for a course in previous semesters, but were not admitted, will be given priority over all other students. Students waiting two semesters will have priority over those who have waited only one semester.
- B. For CSE 105-201:
 1. Juniors will have priority over sophomores, who have priority over freshmen. A senior may be admitted who needs the course to fulfill requirements for graduation for another department.
 2. Transfer students whose prior preparation (mathematics and science) was geared toward planning to major in computer science at Stony Brook will be given priority over students currently at Stony Brook who are changing majors. Again, junior transfers will have priority over sophomores, who have priority over freshmen.
 3. Scholar Incentives students will be admitted to all courses for which they met the prerequisites.

4. All other cases will be judged on the student's performance in college-level mathematics and science courses.
 5. Students admitted to an engineering major will have priority over all other students for CSE 111. Freshmen who meet the prerequisites and have also indicated an engineering area of interest (see General Academic Information section) will have second priority.
- C. For course codes CSE 301-487
1. Students admitted to the computer science major will have priority over all other students.

Courses

See p. 200, Restrictions on Credits, Course Prerequisites, and Course Numbering.

CSE 100 The Societal Impact of Computers

A critical assessment of the role that computing and data processing play in contemporary society. Following an introduction to the information management capabilities that automation can provide, a study will be made of economic, legal, and moral issues involved in the utilization of these capabilities. Crosslisted with EST 100. *Fall and spring, 3 credits*

CSE 105 Introduction to Computer Science and Business Data Processing

An introduction to programming and the solution of problems by data processing algorithms. Sorting, merging, report generation, and statistical summarization using one sequential file. Experience will be gained by designing programs in PL/1 to perform typical business, library, and archiving applications. May not be taken for credit after CSE 111 or 114. *Fall and spring, 3 credits*

CSE 111 Computer Science for Engineers

An introduction to computer science and the use of the computer for solving scientific and engineering-related problems. Students will gain experience using the FORTRAN programming language. Primarily for engineering students *not* planning to take advanced computer science courses. Students who have a C or higher in CSE 114 may not take CSE 111. *Pre- or corequisite:* MAT 125 or 131 or 141; PHY 101 or CEAS major *Fall and spring, 3 credits*

CSE 113 Introduction to Computer Science I

A rigorous introduction to the fundamental concepts of computer science, software development, and the programming language Pascal. Problem-solving techniques that aid in the understanding and solution of algorithmic problems will be stressed. The course will concentrate on analyzing, rather than on writing programs. Mathematical maturity at the level of pre-college calculus is expected. Primarily for students planning to take further computer science courses. This course and CSE 114 replace the discontinued CSE 112.

Fall and spring, 2 credits

CSE 114 Introduction to Computer Science II

Application of the principles of computer science taught in CSE 113. During weekly laboratory sessions, students will gain experience using the Pascal programming language to solve a variety of numeric and non-numeric problems. Topics to be covered include files, records, sets, pointers, text processing, abstract data types, stacks and queues, program design, and testing strategies. This course and CSE 113 replace the discontinued CSE 112.

Fall and spring, 3 credits

CSE 120 Computer Organization and Programming

Explores the physical structure of a computer, machine representation of information, assembly language programming, and input and output communication; and introduces the student to systems programming techniques.

Prerequisite: Grade of C or higher in CSE 114 or passing proficiency examination
Fall and spring, 4 credits

CSE 201 Advanced Programming

Development of techniques in non-numeric programming with particular emphasis on data representation. Detailed treatment of recursive data structures, searching, and sorting. Introduces concepts of modular design of programs. Involves writing large programs in Pascal.

Prerequisite: Grade of C or higher in CSE 114 or passing proficiency examination
Fall and spring, 4 credits

CSE 301 File Processing

The use of sequential, direct, and indexed files. Application to business data processing. Use of PL/1 and COBOL to illustrate the algorithms. Principles of I/O systems. File control languages. Strategies for sorting, merging, hashing, and indexing.

Prerequisite: CSE 201
Fall, 3 credits

CSE 303 Introduction to the Theory of Computation

An introduction to the abstract notions encountered in machine computation. Topics include finite automata, regular expressions, and formal languages, with emphasis on regular and context-free grammars. Questions relating to what can and cannot be done by machines are covered by considering various models of computation, including Turing machines, recursive functions, and universal machines.

Prerequisites: CSE 201; AMS 301 or AMS 302/MAT 312 or MAT 313
Fall, 3 credits

CSE 304 Compiler Design

Topics studied include formal description of programming languages, lexical analysis, syntax analysis, symbol tables and memory allocation, code generation, and interpreters.

Prerequisites: CSE 120, 201, and 303
Fall, 3 credits

CSE 305 Introduction to Database Systems

The design of database management systems to obtain consistency, integrity, and availability of data. Conceptual models and schemas of data: hierarchical, network, relational, and graph theoretic. The role of the database administrator in the organization and use of data.

Prerequisite: CSE 301
Spring, 3 credits

CSE 306 Operating Systems

Students are introduced to the structure of modern operating systems. Topics include virtual memory, resource allocation strategies, concurrency, and protection. The design and implementation of a simple system will be performed.

Prerequisites: CSE 120 and 201
Spring, 3 credits

CSE 307 Principles of Programming Languages

Course will present examples of programming languages (PL) other than Pascal, such as SNOBOL, APL, LISP, ALGOL, PL/1, ADA. Students will write sample programs in some of the languages studied. The languages will be used to illustrate PL constructs such as binding, binding times, data types and implementation, operations (assignment datatype creation, pattern matching), data control, storage management, parameter passing, operating environment. The suitability of these various languages for particular programming tasks will also be covered.

Prerequisite: CSE 201
Spring, 3 credits

CSE 345 Computer Architecture

Starts with functional components at the level of registers, busses, arithmetic, and memory chips; and then uses a register transfer language to manipulate these in the design of hardware systems up to the level of complete computers. Specific topics also included are microprogrammed control, user level instruction sets, I/O systems, and device interfaces, control of memory hierarchies, and parallel processing organizations. Crosslisted with ESE 345.

Prerequisites: CSE 120; ESE 218
Spring, 3 credits

CSE 346 Computer Communications

Crosslisted with ESE 346. (For course description, see alphabetical listing, Electrical Engineering.)

Prerequisites: CSE 111 or 114; MAT 221 or 231
Spring, 3 credits

CSE 352 Artificial Intelligence

Topics covered include critique of artificial intelligence research; state-space problem representations and search algorithms; game-playing programs; theorem-proving programs; programs for the study and simulation of cognitive processes and pattern recognition. Further topics in current research as time permits.

Prerequisites: CSE 201 and 303
Spring, 3 credits

CSE 370 Digital Simulation and Modeling

Pseudorandom number and variate generation. Discrete-event simulator design and construction. Model design, structuring, scaling, verification, and parameter identification. Model control using introductory statistical concepts (sampling, confidence, interval calculation, etc.). Regenerative simulation. Efficient statistical simulation techniques. Pascal or FORTRAN, as well as GPSS, will be used to implement models of computer and engineering systems, deterministic and random signal processing, etc. Crosslisted with ESE 370.

Prerequisites: Upper-division standing; CSE 111 or 114; MAT 221 or 231 or 241 or AMS 210
Fall, 3 credits

CSE 371 Computer Graphics

Display devices and processors, with emphasis on processor-cathode ray tube interface. Generation of characters, straight lines, and curves specified by descriptive geometry and by differential equations, geometrical transform. Input devices and basic instruction sets. Processor logic steps in instruction handling. Introduction to three-dimensional graphics. Crosslisted with ESE 371.

Prerequisite: ESE 218
Spring, 3 credits

CSE 373 Analysis of Algorithms

Mathematical analysis of a variety of computer algorithms, including searching, sorting, matrix multiplication, fast Fourier transform, and graph algorithms. Time and space complexity. Upper bound, lower bound, and average case analysis; Introduction to NP completeness. Some machine computation will be required for the implementation and comparison of algorithms. Crosslisted with AMS 373 and MAT 373.

Prerequisites: MAT 221 or 231 or 241 or AMS 210; CSE 114; permission of Computer Science Department

Fall, 3 credits

CSE 380 Microprocessors and Programmed Logic I

Crosslisted with ESE 380. (For course description, see alphabetical listing, Electrical Engineering. Note: in addition to the prerequisites listed there, CSE majors also need CSE 120.)

Fall and spring, 4 credits

CSE 381 Microprocessors and Programmed Logic II

Crosslisted with ESE 381. (For course description, see alphabetical listing, Electrical Engineering.)

Spring, 3 credits

CSE 475 Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that will supplement a lecture course. The student will receive regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: Senior standing as an undergraduate major within the College; a minimum grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; or permission of department

Fall and spring, 3 credits

CSE 487 Research in Computer Science

A course which involves the student in an independent research project under the supervision of a faculty member. Only three credits of research electives (AMS 487, CSE 487, ESC 499, ESE 499, ESM 499, EST 499) may be counted toward fulfillment of technical elective requirements. May not be taken for more than six credits. When registration is for four credits or more in a semester, CASA approval must be received.

Prerequisite: Permission of instructor and department

Fall and spring, 1 to 6 credits

Computer Science Courses Approved as Engineering Technical Electives

CSE 120 Computer Organization and Programming
 CSE 201 Advanced Programming
 CSE 301 File Processing
 CSE 303 Introduction to the Theory of Computation
 CSE 304 Compiler Design
 CSE 305 Introduction to Database Systems
 CSE 306 Operating Systems
 CSE 345 Computer Architecture
 CSE 346 Computer Communications
 CSE 370 Digital Simulation and Modeling
 CSE 371 Computer Graphics
 CSE 373 Analysis of Algorithms
 CSE 380 Microprocessors and Programmed Logic I
 CSE 381 Microprocessors and Programmed Logic II
 CSE 487 Research in Computer Science (no more than 3 credits)

Computer Engineering

More and more frequently the solutions to current design problems in computer and data processing equipment lie in the area between strictly hardware or software solutions. It is important for students who wish to specialize in computer hardware to be fluent in modern software techniques and to be familiar with digital electronics and the application of large-scale integrated devices.

The following course sequence shows how to shape a program appropriate to computer engineering and at the same time meet the requirements of the Bachelor of Engineering degree in electrical engineering:

Note: HUM/SOC elective courses must be chosen to satisfy College distribution requirements on p. 199.

Sample Course Sequence in Computer Engineering**Freshman**

	<i>Fall Credits</i>
EGC 101	3
PHY 101	4
MAT 131	4
CSE 113	2
HUM/SOC elective	3
Total	16

	<i>Spring Credits</i>
PHY 102	4
MAT 132	4
CSE 114	3
HUM/SOC elective	3
HUM/SOC elective	3
Total	17

Sophomore

	<i>Fall Credits</i>
CHE 131 or 141	4
CHE 133 or 143	1
ESG 261	4
MAT 221	3
CSE 120	4
Total	16

	<i>Spring Credits</i>
ESG 211	2
ESG 271	4
ESE 218	4
CSE 201	3
AMS 361	4
Total	17

Junior

	<i>Fall Credits</i>
ESG 312	2
ESG 372	4
AMS 301	3
ESE 380	4
HUM/SOC elective	3
Total	16

	<i>Spring Credits</i>
AMS 302	3
ESG 315	2
ESE 381	3
ESG 302	4
AMS 310	3
Open elective	1
Total	16

Senior

	<i>Fall Credits</i>
ESE 440	3
ESE 346	3
CSE 306	3
ESE 316	3
HUM/SOC elective	3
Total	15

	<i>Spring Credits</i>
ESE 441	3
AMS 326	3
ESE 345	3
ESE technical elective	3
HUM/SOC elective	3
Total	15

Department of Electrical Engineering

Professors

H.R. Carleton, Ph.D., Cornell University: Optical materials; electro-optics; ultrasonics; optical instrumentation.

Sheldon S.L. Chang, Ph.D., Purdue University: Optimal control; computer architecture; artificial intelligence; information theory; economic theory.

Chi-Tsong Chen, Ph.D., University of California, Berkeley: Systems and control theory; digital signal processing.

John H. Marburger III, Ph.D., Stanford University: Theoretical laser physics.

Velio A. Marsocci, Eng.Sc.D., New York University: Solid-state electronics; integrated electronics; biomedical engineering.

Jayantkumar P. Parekh, Ph.D., Polytechnic Institute of Brooklyn: Microwave acoustics and magnetics; microwave electronics.

Stephen S. Rappaport, Ph.D., New York University: Communication theory; systems.

Stephen D. Shapiro, Chairperson, Ph.D., Columbia University: Computing systems; artificial intelligence; picture processing and pattern recognition.

David R. Smith, Ph.D., University of Wisconsin: Logic design; computer architecture.

John G. Truxal, Sc.D., Massachusetts Institute of Technology: Control and systems engineering; science education.

Hang-Sheng Tuan, Ph.D., Harvard University: Electromagnetic theory; integrated and fiber optics; microwave acoustics.

Armen H. Zemanian, Eng.Sc.D., New York University: Network theory; mathematical models in economic geography.

Associate Professors

John Murray, Ph.D., University of Notre Dame: Systems, controls, and instrumentation.

Kenneth L. Short, Ph.D., State University of New York at Stony Brook: Digital system design; microprocessors; instrumentation.

Stephen Sussman-Fort, Graduate Program Director, Ph.D., University of California, Los Angeles: Electronic circuits; CAD; solid state electronics; electromagnetics.

Assistant Professors

Shyam Narayan Bajpai, Ph.D., Indian Institute of Technology: Microwave acoustics and magnetics.

Gagan Choudhury, Ph.D., State University of New York at Stony Brook: Computer networks and communications.

Harbans Singh Dhadwal, Ph.D., University of London: Lasers and instrumentation.

Mansour Eslami, Ph.D., University of Wisconsin: Systems; control; robotics.

Jeffrey C. Hantgan, Undergraduate Program Director, Ph.D. Cornell University: Linear network theory; electrophysics.

Lloyd A. Marks, M.D., University of Michigan: Biomedical instrumentation and signal processing.

Nazir A. Pashtoon, Ph.D., Stevens Institute of Technology: Analog and digital filters; digital signal processing; electronic circuits; CAD.

Thomas G. Robertazzi, Ph.D., Princeton University: Computer networks; local area networks.

Donald R. Ucci, Ph.D., City College of the City University of New York: Systems and control; signal processing.

Chien-Chung Yeh, Ph.D., University of Pennsylvania: Adaptive arrays and systems; direction finding; spectral estimation.

Teaching Assistants

Estimated number: 40

The Department of Electrical Engineering offers a major leading to the Bachelor of Engineering degree in

electrical engineering with course offerings that span the subject matter of contemporary electrical engineering. Through the department's offerings, a student can develop the requisite background and skills suited to his or her own interests and career goals. The department's research and teaching areas include computers, communications, microprocessors, computer networks, solid-state electronics, electronic circuits, networks, controls and systems, robotics, artificial intelligence, biomedical instrumentation, and computer-aided design.

While most electrical engineering students go into industry on graduation, many go directly to graduate school for further study in business or other professions. Many continue their education on a part-time basis. The programs described below have sufficient flexibility to meet a large variety of individual objectives.

Acceptance into the Major

Prospective Stony Brook Students

Prospective Stony Brook students (entering freshmen and transfer students) wishing to enroll in the electrical engineering program must specify their interest at the time they apply to the University. Highly qualified students will be accepted into the electrical engineering program simultaneously with their admission to the University.

Currently Enrolled Stony Brook Students

The Department of Electrical Engineering's enrollment committee meets twice a year to consider the acceptance of continuing Stony Brook students into the electrical engineering major. Students may apply for fall acceptance during the preceding spring Prime Time and until May 31. For spring acceptance, students may apply in the preceding fall semester during Prime Time and until the end of final examination week.

Only applications from Stony Brook students completing at least one year

of courses (28 credits) at Stony Brook including a year of mathematics and a year of physics at Stony Brook will be considered and under the following conditions:

1. The year of mathematics and physics must be at a minimum level of MAT 131, 132 (or MAT 125, 126, 127) and PHY 101, 102. These one-year sequences must be at a level more advanced than the level at which the student entered Stony Brook.
2. In all mathematics and physics courses the student must earn a G.P.A. of 3.00 or higher and have received no more than one grade in the "C" range.
3. No mathematics or physics courses may be repeated.
4. All transferred courses must have been evaluated before the application deadline.

Students who have transferred to Stony Brook after completing two years (60 credits) at another institution including the equivalent of MAT 132 and PHY 102 may apply for acceptance into the department after one semester at Stony Brook.

Applications must be submitted to the Engineering Undergraduate Student Office.

Requirements for the Electrical Engineering Major

The major requires a minimum core of any six technical electives (excluding ESE 218, 499, and more than three credits of ESE 390) to be taken in the Electrical Engineering Department. The core sequence, along with additional courses and technical electives, is chosen in consultation with a faculty advisor, taking into consideration the particular interest of the student. This will provide a thorough foundation fitted to individual goals.

Minimum Requirements

	<i>Credits</i>
A. Total credits: 128	
B. University writing requirement, p. 199	3
C. College of Engineering and Applied Sciences: Distribution and residence requirements, p. 199-200	18
D. Mathematics: MAT 131, 132, 221**, and any two of the following courses with at least one chosen from the first group: (AMS 361*, 362*) (AMS 301, 311)	18
E. Natural Sciences: PHY 101, 102, CHE 131 and 133 or CHE 141 and 143, and one of: ESG 281, PHY 251, CSE 120	17
F. Computer Science: CSE 111 or CSE 113, 114	3-5
G. Engineering Sciences: ESE 218, ESG 271, 372, 211, 261, and one of: ESG 302, 332, 333*	22
H. Engineering Synthesis and Design: ESG 312, 315, ESE 440, 441 (ESE 440, 441 project must be carried out at Stony Brook under the supervision of an Electrical Engineering faculty member	10
I. Engineering Specialization and Technical Electives: Nine technical elective courses. Of these nine, at least six must be chosen from the technical elective courses offered by the Department, except for ESE 218, 499, and no more than 3 credits of ESE 390	27
J. Open Electives: Any undergraduate University course offered for academic credit may be chosen for open elective credits. No more than 3 credits of physical education can be used to satisfy open elective requirements. Graduate-level courses may be taken to satisfy either open elective	

*Recommended unless a more suitable course is chosen in consultation with a faculty advisor.

**ESE/CSE double majors may take either MAT 221 or 231.

or technical elective requirements with prior departmental approval only 8-10
Total 128

K. Grading
 All courses taken to satisfy requirements D through I must be taken for a letter grade. A grade of C (2.00) or higher is required in the following courses:
 1. ESG 211, 271, 372; MAT 131, 132; PHY 101, 102; ESE 218; and
 2. 6 ESE technical electives

L. Pass/No Credit Option
 The only courses that may be taken on a Pass/No Credit basis are those fulfilling the College distribution and open elective requirements.

Sophomore	
<i>Fall</i>	
MAT 221	3
CHE 131 or 141‡	4
CHE 133 or 143‡	1
PHY 251 or ESG 281	4
ESG 261	4
Total	16
<i>Spring</i>	
AMS 362	4
ESG 211	2
ESG 271	4
HUM/SOC elective	3
ESE 218	4
Total	17

‡May be taken in first year.

Junior	
<i>Fall</i>	
AMS 361‡‡	4
ESG 312	2
ESG 372	4
ESE 340	3
ESE 319	3
Total	16
<i>Spring</i>	
ESG 315	2
ESG 333	4
ESE 315	3
ESE 311	3
CSE 120	4
Total	16

‡‡Recommended unless a more suitable course is chosen in consultation with a faculty advisor.

Freshman	Credits
<i>Fall</i>	
MAT 131	4
PHY 101	4
EGC 101*	3
CSE 111** or CSE 113	3-2
HUM/SOC elective	3
Total	17-16
<i>Spring</i>	
MAT 132	4
PHY 102	4
CSE 114**	3
HUM/SOC elective	3
HUM/SOC elective	3
Total	17

*University Writing Requirement, p. 199.
 **CSE 111 is a one-semester FORTRAN course, while CSE 113 and 114 form a two-semester Pascal sequence. Program requirements for an ESE major require completion of either CSE 111 or CSE 113 and 114. Students interested in pursuing more advanced computer science courses should complete the Pascal sequence.

Senior	
<i>Fall</i>	
ESE 380	4
ESE 440	3
ESE 331	3
Open elective	3
HUM/SOC elective	3
Total	16
<i>Spring</i>	
ESE 441	3
Technical elective	3
HUM/SOC elective	3
Technical elective	3
Open elective	1-2
Total	13-14

Specialized Areas in Electrical Engineering

Some of the major areas of specialization are listed below. This list is not meant to be exhaustive. For more detailed information concerning additional areas and specific course recommendations students should consult the "Undergraduate Guide to Electrical Engineering," which is available from the office of the Department of Electrical Engineering.

- Biomedical Engineering
- Communications and Information Sciences
- Control and System Theory
- Computer Engineering
- Electrical Power Systems
- Electronic Networks and Circuits
- Solid State Electronics and Electromagnetics

B.E./M.S. Program

An engineering student may apply at the end of the junior year for admission to this special program, which will lead to a Master of Science and a Bachelor of Engineering degree at the end of the fifth year. In the senior year, students in the program take three credits of ESE 599, which replace three credits of ESE 441, and three credits of a graduate course, which replace three credits of technical electives. In the fifth year the student will take 24 graduate credits, of which at least 15 credits are coursework and 6 credits are ESE 599.

The advantages of this program over the regular M.S. program are that a student may start his or her M.S. thesis in the senior year, and that only 24 credits are needed in the fifth year as opposed to 30 credits for a regular M.S. student.

Regulations of the B.E./M.S. Program

1. Students must apply and be admitted to the combined degree program. Applicants must have completed a minimum of 60 credits of college work with an overall G.P.A. of 3.0 or higher in all college work. The application must include approval by both the chairperson of the department offering the bachelor's degree and the graduate studies director of the program offering the master's degree.
2. Students must formally apply and be accepted into the Graduate School. This application and admission process is independent of admission to the combined degree program.
3. Students must take a minimum of 30 graduate credits, 24 of which must be taken after the student has been enrolled in the graduate program. The remaining six credits may be taken while the student is formally an undergraduate but after his or her admission to the combined degree program. All graduate coursework taken after the student has been accepted into the combined degree program is subject to Graduate School regulations.
4. A course used for undergraduate credit may not be used for graduate credit.

Courses

Open Electives

See p. 200, Restrictions on Credits, Course Prerequisites, and Course Numbering.

ESE 290 Transitional Study

A vehicle used for transfer students to remedy discrepancies between a Stony Brook course and a course taken at another institution. For example, it will allow the student to take the laboratory portion of a course for which he or she has had the theoretical portion elsewhere.

Prerequisite: Permission of department
Fall and spring, 1 to 3 credits

ESE 440 Engineering Design I

Lectures by faculty and visitors on typical design problems encountered in engineering practice. During this semester each student will choose a senior design project for Engineering Design II. A preliminary design report is required.

Prerequisites: ESG 315, 372; two ESE technical electives (except ESE 390, 499); ESE major; senior standing
Fall, 3 credits

ESE 441 Engineering Design II

Student groups carry out the detailed design of the senior projects chosen during the first semester. A final and detailed design report must be prepared.

Prerequisite: ESE 440
Spring, 3 credits

ESE 475 Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that will supplement a lecture course. The student will receive regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: Senior standing as an undergraduate major within the College; a minimum grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department
Fall and spring, 3 credits

Technical Electives

ESE 218 Digital Systems Design (formerly ESE 318)

Intended to be of use to nonspecialists, and, in addition, to be part of the digital circuits and systems sequence. The course starts from a description of digital circuits regarded as functional blocks and leads to a consideration of the logical design of combinational and sequential digital systems. It is presented from an applied point of view, utilizing demonstrations and laboratory experiments. Topics include: binary representation of information, gate types, combinational circuit design, counters, registers, arithmetic circuits, sequential circuit design, and programmed logic.

Prerequisites: PHY 102 and CSE 111 or 114 (for engineering majors); CSE 120 (for computer science majors)
Fall and spring, 4 credits

ESE 304 Electronic Instrumentation and Operational Amplifiers

The design of electronic instrumentation: structure of basic measurement systems, transducers, analysis and characteristics of operational amplifiers, analog signal conditioning with operational amplifiers, sampling, multiplexing, A/D and D/A conversion; digital signal conditioning, data input and display, automated measurement systems. Application of measurement systems to pollution, and biomedical and industrial monitoring will be considered.

Prerequisite: ESG 372
Fall, 3 credits

ESE 306 Modern Filter Design

Design of electrical wave filters for communication and control. Topics include basic theorems on time and frequency response, physical realizability, minimum phase and attenuation characteristics; frequency transformation, transfer function synthesis based on insertion loss, optimum transmission, and maximum signal-to-noise ratio; and realization with L, C elements, active circuits, and surface wave filters.

Prerequisite: ESG 271
Fall, 3 credits

ESE 310 Modern Circuit Theory

Circuit elements and n-ports. Linearity, time-invariance, causality, passivity, and stability. Graph theory and its algebraic descriptions. Tellegen's theorem. State-variable representation and time-domain solutions. Small-signal and global analysis of nonlinear networks. Stability analysis.

Prerequisite: ESG 271
Spring, 3 credits

ESE 311 Electronics Circuits Design I

Engineering design concepts applied to electronic circuits. Basic network concepts, computational analysis and design techniques; models of electronic devices; biasing and compensation methods; amplifiers and filters designed by conventional and by computer-aided techniques.

Prerequisite: ESG 372
Fall and spring, 3 credits

ESE 312 Electronic Circuits Design II

Material covered will be a continuation of that introduced in ESE 311 with special emphasis placed on computer-aided design of electronic circuits.

Prerequisite: ESE 311
Spring, 3 credits

ESE 315 Introduction to Feedback Control Theory

A first course in the analysis and design of linear control systems. Control components and their mathematical description are first introduced. A systematic procedure is then introduced to analyze any linear control system. Both analog and digital computer simulations are discussed. Four design techniques: optimal design, root-locus method, frequency domain technique, and parameter optimization are discussed and compared.

Prerequisite: ESG 271

Fall and spring, 3 credits

ESE 316 Digital Devices and Circuits

Switching characteristics of devices: Bipolar transistors, MOSFETS's, C.C.D.'s. Circuit analysis of leading IC gate technologies: TTL, ECL, MOS, CMOS, dynamic MOS. Interfacing logic families. Application of small-scale IC's in control and timing circuits. Large-scale integrated circuits: organization and characteristics of R.A.M.S., ROM's and PLA's. Optoelectrical devices. A small number of laboratory sessions included.

Prerequisite: ESG 372

Fall, 3 credits

ESE 319 Introduction to Electromagnetic Fields and Waves

Fundamental experimental results of electromagnetism. Topics include mathematical formulation of integral laws and derivation and physical interpretation of differential Maxwell equations in free space; interaction of electromagnetic sources and fields, engineering applications; electromagnetic energy and power; generation of electromagnetic fields and waves in unbounded media by known sources; and transmission-line theory.

Prerequisite: ESG 271

Fall, 3 credits

ESE 321 Electromagnetic Waves and Fiber Optics

Propagation of electromagnetic waves in free space and dielectrics; wave propagation in anisotropic media and crystals; guided electromagnetic waves and surface waves; microwave waveguides, thin film planar optical waveguides, and optical fibers; introduction to the fundamentals of optical fiber communication components and systems.

Prerequisite: ESE 319

Spring, 3 credits

ESE 330 Integrated Electronics

An introduction to semiconductor electronics leading to the characterization of various passive and active devices, with emphasis on integrated electronic structures: theory of p-n junction transistors; device design techniques; the applications of these devices in active networks; operation principles of analog circuits.

Prerequisite: ESG 372

Fall, 3 credits

ESE 331 Physical Electronics

A study of the physical principles involved in the operation of electronic devices such as bipolar transistors, field effect transistors, lasers, and superconducting and magnetic devices.

Prerequisites: ESG 281 (or PHY 251) and 271

Fall, 3 credits

ESE 332 Lasers and Optical Electronics

Basic radiation theory, Gaussian beams, optical resonators; interaction of radiation and atomic systems, theory of laser oscillation; investigation of specific solid, gas, and semiconductor lasers; parametrics and second harmonic generation; modulation and detection of optical radiation; noise processes in optical generation and detection.

Prerequisite: ESG 372

Spring, 3 credits

ESE 333 Lasers: Technology and Utilization

Reviews briefly the fundamentals of laser theory, and then addresses itself in its main part to the various types of lasers, from the point of view of theory as well as of construction and design. Singled out are lasers which have found their most widespread application in areas ranging from engineering measurements and physics (including spectroscopy) to optical image processing and astronomy, as well as in many different areas of medicine and biology. Appropriate mathematical background is introduced in the course.

Prerequisite: ESG 372

Spring, 3 credits

ESE 340 Basic Communication Theory

Basic concepts in both analog and digital data communications: signals, spectra, and linear networks; Fourier transforms, energy and power spectra, filtering; AM, FM, and PM; time and frequency multiplexing; discussion of problems encountered in practice; noise and bandwidth considerations; pulse modulation schemes.

Prerequisite: ESG 271

Fall, 3 credits

ESE 341 Information Theory and Coding

Statistical characteristics of languages, information sources as random processes, measurement of information, noiseless coding; the binary symmetric channel and other digital channels; channel capacity; introduction to algebraic coding, theory for noisy channels, communication with feedback.

Prerequisite: ESG 271

Spring, 3 credits

ESE 342 Data Communications Systems

Pulse modulation and sampling. All-digital networks. Pulse code modulation. Digital modulation techniques including ASK, FSK, PSK, DPSK. Error control coding. Exchange of reliability for rate. Synchronous and asynchronous systems. Line control. Equalization. Message and circuit switching. Packet radio channels.

Prerequisite: ESE 340

Spring, 3 credits

ESE 345 Computer Architecture

Starts with functional components at the level of registers, busses, arithmetic, and memory chips, and then uses a register transfer language to manipulate these in the design of hardware systems up to the level of complete computers. Specific topics also included are microprogrammed control, user level instruction sets, I/O systems, and device interfaces, control of memory hierarchies, and parallel processing organizations. Crosslisted with CSE 345.

Prerequisites: CSE 120; ESE 218

Spring, 3 credits

ESE 346 Computer Communications

Basic principles of computer communication design and analysis. Technologies covered include packet networks, circuit switched networks, packet radio, local area networks, Aloha channels, and protocols. Techniques covered include algorithms for network design and routing as well as statistical models of network links. Crosslisted with CSE 346.

Prerequisites: CSE 111 or 114; MAT 221 or 231

Fall, 3 credits

ESE 347 Digital Signal Processing

Topics covered include systems analysis, matrices, discrete time systems, difference equations, convolution and deconvolution, state space techniques, frequency domain techniques, the z-transform and its applications, the discrete and fast Fourier transforms, digital filter design and analysis techniques, computer-aided design.

Prerequisite: ESE 340

Fall, 3 credits

ESE 348 The Computer as a Laboratory Instrument

Computer-system architecture and design philosophy is described in lectures; laboratory experiments demonstrate basic principles of real-time measurement, control, and computation. Role of computer as dedicated system component in data acquisition, control, automated testing, real-time transforms, and signal processing is developed by hands-on experiments.

Prerequisite: ESE 218

Fall, 3 credits

ESE 349 An Introduction to Fault Diagnosis of Digital Systems

Designed to be a follow-up to ESE 218, in order to acquaint students with fault diagnosis of logic circuits. Both combinational and sequential circuits are considered. Concepts of faults and fault models are presented followed by the discussions of test generation, test selection, and fault dictionaries. Emphasis is on test-generation for fault detection, fault location, fault location within a module, and fault correction. Some basic reliability-enhancing design techniques for digital circuits and systems are also discussed.

Prerequisite: ESE 218

Spring, 3 credits

ESE 350 Electrical Power Systems

Fundamental engineering theory for the design and operation of a modern electric power system. Modern aspects of generation, transmission, and distribution will be considered with appropriate inspection trips to examine examples of these facilities. The relationship between the facilities and their influence on the environment will be reviewed. Topics included are power system fundamentals, characteristics of transmission lines, generalized circuit constants, transformers, control of power flow and of voltage, per units system of computation, system stability, and extra-high voltage a.c. and d.c. transmission.

Prerequisite: ESG 271

Spring, 3 credits

ESE 351 Energy Conversion

Natural and secondary energy sources; methods of energy conversion including thermionic, thermoelectric and magnetohydrodynamic converters, fuel cells, and solar cells.

Prerequisites: ESG 271; ESG 301 or 302

Spring, 3 credits

ESE 352 Electromechanical Energy Converters

Basic principles of energy conversion; d.c., induction, and synchronous rotary converters; the three-phase system and symmetrical components; the relationships between voltage, current, flux, and m.m.f.; equivalent circuits and operating characteristics of rotary converters; analysis of saturation effects.

Prerequisite: ESG 372

Fall, 3 credits

ESE 362 Optoelectronic Devices and Optical Imaging Techniques

A thorough introduction to the field of optoelectronics including a firm basis of fundamental physics and an introduction to optical imaging and optical communication systems. A detailed coverage of laser and semiconductor devices along with a study of the commonly used optical radiation detectors. The definition of optoelectronics is extended to include a discussion of the behavior of light in crystals.

Prerequisites: ESG 372; ESE 319

Fall, 3 credits

ESE 370 Digital Simulation and Modeling

Pseudorandom number and variate generation. Discrete-event simulator design and construction. Model design, structuring, scaling, verification, and parameter identification. Model control using introductory statistical concepts (sampling, confidence, interval calculation, etc.). Regenerative simulation. Efficient statistical simulation techniques. Pascal or FORTRAN, as well as GPSS, will be used to implement models of computer and engineering systems, deterministic and random signal processing, etc. Crosslisted with CSE 370.

Prerequisites: Upper-division standing; CSE 111 or 114; MAT 221 or 231 or 241

Fall, 3 credits

ESE 371 Computer Graphics

Display devices and processors, with emphasis on processor-cathode ray tube interface. Generation of characters, straight lines, and curves specified by description geometry and by differential equations. Geometrical transform. Input devices and basic instruction sets. Processor logic steps in instruction handling. Introduction to three-dimensional graphics. Crosslisted with CSE 371.

Prerequisite: ESE 218; CSE 111 or 114

Spring, 3 credits

ESE 380 Microprocessors and Programmed Logic I

Concepts and design techniques necessary for the implementation of digital systems using programmed logic devices such as microprocessors, read-only memories (ROMs), and programmable logic arrays (PLAs). Emphasis is on microprocessor based-systems design. Hardware and software design techniques are equally emphasized. Laboratory work involves the actual structuring, programming, and debugging of programmed logic systems. Crosslisted with CSE 380.

Prerequisites: ESE 218; CSE 111 or 114

Fall and spring, 4 credits

ESE 381 Microprocessors and Programmed Logic II

This course is a continuation of ESE 380 and emphasizes systematic approaches to and trade-offs in the design of microprocessor-based systems from initial specification to implementation. Crosslisted with CSE 381.

Prerequisite: ESE 380

Spring, 3 credits

ESE 390 Special Topics in Digital Systems

A vehicle for new course material of current interest in the area of digital systems. When offered, a specific title and course description will be made available at registration time. Only three credits may be counted as technical electives.

Prerequisite: Permission of instructor
Schedule to be announced, 1 to 6 credits, repetitive

ESE 499 Research in Electrical Sciences

An independent research project with supervision by the faculty. Permission to register will require that the student have an average grade of B in all engineering courses and the agreement of a faculty member to supervise the research. Only three credits of research electives (AMS 487, CSE 487, ESE 499, ESC 499, ESM 499, EST 499) may be counted toward fulfillment of the non-ESE technical elective requirements.

Fall and spring, 3 credits, repetitive

Interdisciplinary Program in Engineering Chemistry

Program Committee

Patrick Herley: Materials Science and Engineering

Robert Kerber: Chemistry

The interdisciplinary program in engineering chemistry (ECM), which leads to the Bachelor of Science degree, is designed to provide students with a basic understanding of the chemistry and materials technology underlying modern materials engineering.

This program emphasizes a strong background in physical chemistry infused with an orientation toward the solid-state sciences and materials technology. Its central theme is a chemistry core strengthened by materials science and laboratory courses, the latter with a unique "chemistry of materials" component. The choice of suitable electives will enable the student to emphasize such different aspects of solid-state sciences as polymeric materials, modern industrial processes, mineral resources, biomaterials, etc.

Jointly sponsored by the College of Arts and Sciences and the College of Engineering and Applied Sciences, the program is a basic preparation for training chemical materials professionals who can enter a wide range of industries or proceed to graduate work in either solid state chemistry or materials science.

B.S./M.S. Program

Engineering chemistry students who are interested in pursuing graduate study in materials science may wish to apply for the five-year program at the end of their junior year. For further details, see information on p. 220.

College Proficiency and Distribution Requirements

Students majoring in engineering chemistry must meet the requirements of the College of Arts and Sciences with the following exception to the distribution requirements:

Elementary foreign language courses numbered 111 through 116, if taken to fulfill the language proficiency requirement, may also be used to fulfill the Arts and Humanities requirement.

Requirements for the Major

The interdisciplinary major in engineering chemistry leads to the Bachelor of Science degree. The following courses are required and must be taken for a letter grade.

No transferred course with a grade lower than C- may be used to fulfill any major requirement.

Mathematics and Basic Science Requirements

	<i>Credits</i>
A. MAT 131 Calculus I and MAT 132 Calculus II	8
B. MAT 231 Calculus III: Linear Algebra and MAT 306 Calculus IV: Multivariate Calculus or MAT 221 Calculus III: Differential Equations and AMS 362 Engineering Mathematics, B	6-7
C. CSE 111 Computer Science for Engineers	3
D. CHE 131, 132 General Chemistry or CHE 141, 142 Honors Chemistry	8
E. CHE 133, 134 General Chemistry Laboratory or CHE 143, 144 Honors Chemistry Laboratory	2
F. PHY 101, 102 General Physics I, II; PHY 251 General Physics III or ESG 281 An Engineering Introduction to the Solid State	11-12
Subtotal	38-40

Note: The following alternate calculus sequences may be substituted: MAT 141, 142 or 125, 126, 127 for 131, 132; MAT 241 for 231; MAT 307 for 306.

<i>Core</i>	<i>Credits</i>
A. CHE 301, 302 Physical Chemistry I, II	6
B. CHE 303 Solution Chemistry Laboratory	2
C. CHE 304 Chemical Instrumentation Laboratory	2
D. CHE 321 or 331 Organic Chemistry	3
E. ESG 332 Materials Science I: Structure and Properties of Materials	4
F. ESG 333 Materials Science II: Electronic Properties	4
G. ESM 302 Materials Design and Techniques	4
Subtotal	25
Total	63-65

Electives

Selection of technical and open electives to give a total number of credits of 120. Students are advised to divide their electives among courses within the College of Engineering and Applied Sciences and the Chemistry Department that strengthen their professional interests, and courses in the social sciences and humanities that help them place the problems of society and industry in perspective.

Students who wish to meet the American Chemical Society certification requirements must take, in addition to the above, CHE 322, 333, and 334 (organic), and two additional advanced chemistry courses.

Engineering Science

Alexander H. King, Director: Materials Science and Engineering

The major in engineering science, in which all departments of the College participate, furnishes the student with a broad background in the basic engineering disciplines. It is designed for those who wish an engineering education of a less specialized nature, or whose career goals lie outside the boundaries of the conventional engineering departments. Through the proper choice of electives and design projects, a degree of specialization may be achieved within the major. Recommended course sequences in materials science and mechanics for this purpose are indicated below. In addition, with the help of a faculty advisor, the student may design a program uniquely suited to his or her own interests and objectives that cuts across departmental and college lines. Engineering students who wish to earn a B.E. degree with concentration in applied analysis and statistics, computer science, or materials science should elect the major in engineering science. It is also well suited as preparation for graduate studies in architecture, business, law, or medicine. Information about these studies can be provided by the faculty advisors listed on page 198.

B.E./M.S. Program

An engineering science student may apply at the end of the junior year for admission to this special program, which will lead to a Master of Science degree in materials science and engineering and a Bachelor of Engineering degree in engineering science at the end of the fifth year. A student in the program takes, in the senior year, 3 credits of ESG 599, which replace 3 credits of ESG 441,

and 3 credits of a graduate course, which replace 3 credits of technical electives. In the fifth year the student will take 24 graduate credits, of which at least 15 credits are coursework and 6 credits are ESG 599. The advantages of this program over the regular M.S. program are that a student may start his or her M.S. thesis in the senior year, and that only 24 credits are needed in the fifth year as opposed to 30 credits for a regular M.S. student. For details of the M.S. degree requirements, see the *Graduate Bulletin*.

Minimum Requirements for the Bachelor of Engineering Degree in Engineering Science

	Credits
A. Total credits: 128	
B. University writing requirement, p. 199	3
C. College of Engineering and Applied Sciences distribution and residence requirements, p. 199-200	18
D. Mathematics MAT 131, 132, 221, AMS 361, 362 (or approved upper-division course in mathematics)	18
E. Sciences PHY 101 102, 251 or ESG 281; CHE 131, 132, 133 or CHE 141, 142, 143	21
F. Introductory Courses in Computer Science: CSE 111 or 113, 114	3-5
G. Engineering Science Core Program: ESG 211, 312 and seven courses of the following ten with at least two courses each in mechanical engineering, materials science, and electrical engineering: Mechanical Engineering—ESG 261, 301, 363, 364 Materials Science and Engineering—ESG 302, 307, 332, 333 Electrical Engineering—ESG 271, 372	32

- H. Engineering Synthesis and Design:
Satisfied through the project phase of ESG 313, 314, 315, 316, 317, or 318; and ESG 440 and 441
- I. Engineering Specialization and Technical Electives:
The student should select courses of specialization suggested by each department to acquire depth of knowledge complementary to the breadth of subject material in the major.
- J. Open Electives and Other Requirements:
Any undergraduate University course offered for academic credit may be chosen for open elective credits. No more than 3 credits of physical education can be used to satisfy open elective requirements.
- 3-5
Total 128
- K. Grading
A grade of C or higher is required in the following courses:
1. MAT 131, 132; PHY 101, 102; ESG 211, 271, 312; and
2. Each of at least six technical electives offered by the Departments of Electrical Engineering, Mechanical Engineering, or Materials Science and Engineering.
All courses taken to satisfy requirements D through I must be taken for a letter grade.

Recommended Course Sequences Materials Science and Engineering

Students wishing to specialize in materials science and engineering should first determine whether they wish to work toward qualifications in electronic, optical, and magnetic (EOM) applications or physical metallurgy, which is more fundamentally concerned with the underlying structures and properties of materials. Suggested courses in these two areas are as follows:

Electronic, Optical, and Magnetic Applications

Core Program: ESG 261, 271, 301, 307, 332, 333, 372

Technical Electives: Choose from

- *ESM 310 Kinetic Processes in Solids
- *ESM 325 Diffraction Techniques and Structure of Solids
- *ESM 336 Electronic Materials
- *ESM 337 Dielectric and Magnetic Materials
- *ESM 355 Processing of Materials
- ESM 335 Introduction to Polymers
- ESE 319 Introduction to Electromagnetic Waves and Fields
- ESE 321 Electromagnetic Waves and Fiber Optics
- ESE 330 Integrated Electronics
- ESE 331 Physical Electronics
- ESE 332 Laser and Optical Electronics

Physical Metallurgy

Core Program: ESG 261, 271, 363, 364, 302, 332, 372

Technical Electives: Choose from

- *ESM 306 Mechanical Properties of Engineering Materials
- *ESM 307 Physical Metallurgy
- *ESM 310 Kinetic Processes in Solids
- *ESM 315 Phase Transformation
- *ESM 325 Diffraction Techniques and Structures of Solids
- ESM 355 Processing of Materials
- ESM 309 Thermodynamics of Solids
- ESC 305 Heat and Mass Transfer
- ESC 355 Applied Stress Analysis

Biomedical Engineering

Biomedical engineering is not a field of study that can be offered easily as an academic discipline because the term describes the *application* of various engineering disciplines to biomedical problems, rather than an engineering discipline in its own right. For example, a mechanical engineer may apply his or her skills to the design of prosthetic devices, or an instrumentation engineer might design patient-monitoring equipment for intensive care facilities; both could be considered to be engaged in biomedical engineering. What is required for this application is a sound understanding of a particular branch of engineering along with an application for some of the principles of biology and medicine. The would-be biomedical engineer must first decide which branch of engineering he or she wishes to apply to the field, then obtain

*Courses marked with an asterisk are highly recommended.

the appropriate expertise. Certain technical electives may be appropriate and these are listed below. The student should also make use of open elective credits to learn the basics of biology and organic chemistry.

Technical Electives

- ESI 310 Biomedical Engineering
- ESM 302 Materials Design and Techniques
- ESE 315 Introduction to Feedback Control Theory
- ESM 347 Physical Chemistry of Metal-Gas and Metal-Liquid Interfaces
- ESM 351 Materials in Medical and Dental Sciences
- ESM 335 Introduction to Polymers
- ESM 355 Processing of Materials
- ESC 305 Heat and Mass Transfer

Open Electives

- CHE 321, 322 Organic Chemistry
- BIO 103 Introduction to Human Biology
- BIO 104 Human Health and Illness
- BIO 151, 152 Principles of Biology
- BIO 230 Human Physiology
- BIO 310 Cell Biology
- BIO 361, 362 Biochemistry I, II

The above course lists *do not* constitute a degree program in biomedical engineering; they are merely suggestions for courses that might be included in an engineering science program.

Manufacturing Engineering

A specialization in manufacturing engineering can be obtained by choosing the following courses:

Core Program: ESG 261, 271, 301 or 302, 332, 333 or 364, 363, 372 (either ESG 302 or 333 must be taken)

Technical Electives

- *AMS 310 Survey of Probability and Statistics
- ESM 302 Materials Design and Techniques
- *ESM 306 Mechanical Properties of Engineering Materials
- *ESM 307 Physical Metallurgy
- *ESM 355 Processing of Materials
- ESC 305 Heat and Mass Transfer
- *ESC 310 Machine Kinetics and Design
- ESE 218 Digital Systems Design
- *ESE 315 Introduction to Feedback Control Theory
- *EST 392 Engineering and Managerial Economics
- CSE 346 Computer Communications

*Courses marked with an asterisk are highly recommended.

Engineering science students who wish to specialize in either electrical or mechanical engineering should choose elective courses in consultation with a faculty advisor in the appropriate department. This will assure appropriate consideration of the student's interests and goals.

Courses

See p. 200, Restrictions on Credits, Course Prerequisites, and Course Numbering.

Engineering Science Courses**ESG 211 Engineering Laboratory I: Electrical Circuits and Electronics**

Introduction to the measurement of electrical quantities; instrumentation; basic circuits; their operation and applications; electronic devices; amplifiers, oscillators, power supplies, wave shaping circuits, and basic switching circuits.

Pre- or corequisite: CSE 111 or 114

Corequisite: ESG 271

Fall and spring, 2 credits

ESG 261 Particles and Rigid Body Mechanics

A review of vector algebra and calculus with kinematic applications such as curves in space, displacement, velocity, and acceleration of point particles in classical orthogonal coordinate systems; notion of force; statics of a single particle including gravity, friction, electrostatic, and magnetostatic forces; force as a vector field; moment about a point and moment about a line, couples, work; equivalent force systems and the wrench; equilibrium of systems of mass particles; special case of the rigid body. Rigid body kinematics and the kinematics of relative motions; single particle dynamics, including charge-carrying particles and elementary linear vibrations; dynamics of clusters of particles; dynamics of the rigid body.

Prerequisite: PHY 101

Pre- or corequisite: CSE 111 or 114; MAT 221

Fall, 4 credits

ESG 271 Electrical Sciences I

The efficient generation, storage, and transmission of energy and information are used to motivate the student's introduction to the various fields of electrical sciences. Such topics as signal analysis, electrical measurements, Kirchhoff's laws, linear circuit analysis via Laplace transforms,

semiconductor devices, and basic electronic circuits are covered both from the theoretical and practical viewpoints. Computer-aided techniques are included.

Prerequisites: MAT 221; PHY 102

Pre- or corequisite: CSE 111 or 114

Fall and spring, 4 credits

ESG 281 An Engineering Introduction to the Solid State

The purpose of this course is to prepare students for the understanding of the nature and properties of the crystalline solid state, with particular attention to semiconductors and semiconductor technology. Elementary notions of statistical and kinetic theory necessary for an understanding of the behavior of assemblies of particles are introduced. The basic concepts of oscillatory motions, wave-like phenomena, and classical electricity and magnetism are reviewed. Elementary quantum mechanics is introduced and a few simple problems (harmonic oscillator, electron in a box) are solved. The theory is then applied to the hydrogen atom; multielectron conductors are described; the origin of energy bands and energy gaps is explained; concepts such as Fermi energy, density of states, and work function are introduced; and, finally, the optical and transport properties of metals, insulators, and semiconductors are discussed.

Prerequisites: PHY 101, 102; CSE 111 or 114

Fall and spring, 4 credits

ESG 301 Thermodynamics

The absolute temperature and other thermodynamic variables, including the thermodynamic potentials, are used to describe systems in thermal equilibrium by considering their interrelationships as governed by the laws of classical thermodynamics. Applications to phase transformations, inert and chemically reacting multicomponent systems, power cycles, and engines are considered.

Prerequisites: MAT 221; CSE 111 or 114

Fall, 4 credits

ESG 302 Thermodynamics of Materials

The basic laws and concepts of thermodynamics are elucidated, and the important thermodynamic relationships systematically developed with reference to the behavior of materials. The thermodynamics of solids is discussed, including the thermodynamics of solutions and the calculation of reaction-free energies and equilibria in condensed phase reactions such as phase transformations, oxidation, and diffusion.

Prerequisite: CSE 111 or 114

Corequisite: MAT 221

Spring, 4 credits

ESG 307 Applied Physical Concepts for Engineers

Basic postulates of quantum mechanics. Schrodinger equation and methods for its solution. Introductory statistical mechanics and its relation to thermodynamics. Group theory and its applications.

Prerequisite: ESG 281 or PHY 251

Spring, 4 credits

ESG 312 Engineering Laboratory II: Theory and Measurement in Engineering

The following topics will be considered: interaction of theory and experimentation, formulation of the theory, theoretical planning of the experiment, uses of theory in design of experimental apparatus, methods of data analysis, experimental problems involving sensor readout systems, and electronic instrumentation in scientific research.

Prerequisites: Junior standing; CSE 111 or 114

Fall, 2 credits

ESG 313-318 Engineering Experimentation

ESG 313 Engineering Experimentation:

Applied Mathematics and Statistics

ESG 314 Engineering Experimentation:

Computer Science

ESG 315 Engineering Experimentation:

Electrical Engineering

ESG 316 Engineering Experimentation:

Materials Science and Engineering

ESG 317 Engineering Experimentation:

Mechanical Engineering

ESG 318 Engineering Experimentation:

Technology and Society

Projects under faculty supervision which emphasize the principles of experimental design and data evaluation. Projects will generally be undertaken by teams of two students, from a selection of problems submitted by the engineering faculty or suggested by the student with faculty approval. Students should register for the one course number above that names their project advisor's department.

Prerequisites for ESG 313, 314, 316, 318: ESG 211 and 312; CSE 111 or 114

Prerequisites for ESG 315: ESG 211, 312, 372; junior standing

Prerequisites for ESG 317: ESG 211, 312, 364

Corequisite for ESG 317: ESG 363

Spring, 2 credits

ESG 332 Materials Science I: Structure and Properties of Materials

A study of the relationship between the structure and properties of engineering materials and the principles by which materials' properties are controlled. The structure and structural imperfections in simple crystalline materials and the role that these factors play in defining electrical conductivity, chemical reactivity, strength, and ductility are considered. The molecular structure of polymers is discussed and

related to the behavior of plastics, rubbers, and synthetic fibers. The principles of phase equilibria and phase transformations in multicomponent systems are developed. These principles are applied to the control of the properties of semiconductors, commercial plastics, and engineering alloys by thermochemical treatment. Corrosion, oxidation, and other deterioration processes are interpreted through the interaction of materials with their environment.

Prerequisites: CHE 131 or 141; CSE 111 or 114
Fall, 4 credits

ESG 333 Materials Science II: Electronic Properties

After a review of quantum mechanics and atomic physics, the binding energy and electronic energy levels in molecules and solids are discussed. The free-electron theory of metals is introduced and applied to the quantitative treatment of a number of electron emission effects. The band theory of solids is developed quantitatively via the Kronig-Penney model, and the transport properties of metals and semiconductors are discussed in detail. The physical principle of p-n junctions, transistors, tunnel diodes, etc. is explained. Fundamentals and applications of photoconductors, lasers, magnetic materials, and superconductors are also discussed.

Prerequisites: PHY 251 or ESG 281; CSE 111 or 114; (ESG 332 is not a prerequisite)
Spring, 4 credits

ESG 363 Mechanics of Solids

An introduction to the mechanics of deformable solids used in engineering structures. Topics include two-dimensional descriptions of stress, displacements and strain, elastic stress-strain temperature relations, beam deformations due to bending and axial forces, statically indeterminate beams, influence of plasticity on stress analysis, torsion, and buckling.

Prerequisites: ESG 261; CSE 111 or 114
Spring, 4 credits

ESG 364 Introduction to Fluid Mechanics

Fundamental properties of fluids and their conservation laws in the context of applications to common engineering flows. Topics covered include hydrostatics, surface tension, dimensional analysis and dynamic similitude, Euler's equation, laminar and turbulent boundary layers, lubrication, drag on immersed bodies, open channel and pipe flows, and the rotating coordinate systems.

Prerequisites: ESG 261; CSE 111 or 114
Fall, 4 credits

ESG 372 Electrical Sciences II

The pertinent elements of solid-state physics and circuit theory are reviewed and applied to the study of electronic devices and circuits including junction diodes, transistors, gates and electronic switches, large signal and small signal analysis of amplifiers, amplifier frequency response, and rectifiers and wave-shaping circuits.

Prerequisites: ESG 271; CSE 111 or 114
Fall, 4 credits

ESG 440 Engineering Design I

Lectures by faculty and visitors on typical design problems encountered in engineering practice. During this semester each student will choose a senior design project for Engineering Design II. A preliminary design report is required.

Prerequisites: ESG 312; one of ESG 313, 314, 315, 316, 317, 318; CSE 111 or 114
Fall, 3 credits

ESG 441 Engineering Design II

Student groups carry out the detailed design of the senior projects chosen during the first semester. A final and detailed design report must be prepared.

Prerequisite: ESG 440
Spring, 3 credits

Interdepartmental Courses**ESI 100 Engineering Orientation Seminar**

A one-hour lecture each week by a speaker from outside or from the College of Engineering and Applied Sciences faculty. Topics will include all the various aspects of engineering offered at Stony Brook. No reports are required. Satisfactory/Unsatisfactory grading only, based on attendance, and the course may be taken up to three times as open electives.

Fall and Spring, 1 credit, repetitive

ESI 300 Independent Study Projects

An engineering student may, in consultation with faculty members, develop an individual course of academic investigation and study. The student must prepare an outline of the proposed project clearly stating its scope, intent, and methods which will be used to conduct it. He or she must obtain from two faculty members written approval of the project and agreement to supervise it and to recommend appropriate academic credit. The

project then requires final approval by the Undergraduate Curriculum and Teaching Policy Committee. The maximum allowable total credit for independent study is 30 credits with no more than 18 credits in any one semester. Though independent study may be taken in any semester, it is normally expected that an engineering student will take independent study as a junior or senior. The academic credit assigned to independent study projects is normally drawn from the block of elective credits and engineering design in the curriculum.
Fall and Spring, 1 to 18 credits

ESI 310 Biomedical Engineering

A systematic and basic development of the engineering principles applicable to medicine and biological systems in terms of the following basic principles: biological systems analysis, biomechanics (viscoelastic, rheological properties of tissues, stress distributions in living organisms, etc.), bioenergetics and radiation technology, mass and heat transport in living systems, bioelectronics, and biomaterials sciences. Applications are to bioastronautics, artificial organs, environmental control, man-machine systems, and the simulation of biological systems. A technical elective.

Fall, 3 credits

Department of Materials Science and Engineering

Professors

John C. Bilello, Ph.D., University of Illinois: Dislocations; mechanical properties; fracture, synchrotron topography.

Herbert R. Carleton, Chairperson, Ph.D., Cornell University: Optical materials; electro-optics.

Benjamin Chu, Ph.D., Cornell University: Laser scatterings; small-angle X-ray scatterings; critical phenomena; molecular forces.

Allen N. Goland, Adjunct, Ph.D., Northwestern University: Solid state physics.

Patrick J. Herley, Ph.D., Rhodes University, South Africa; Ph.D., Imperial College, London: Thermal decomposition; catalysis.

Herbert Herman, Ph.D., Northwestern University: Phase transformations; protective coatings.

Franco P. Jona, Ph.D., Eidgenossische Technische Hochschule: Surface structures.

Sumner N. Levine, Ph.D., University of Wisconsin: Electronic materials.

Charles T. Prewitt, Ph.D., Massachusetts Institute of Technology: Crystallography.

Leslie L. Seigle, D.Sc., Massachusetts Institute of Technology: Thermodynamics; diffusion; protective coatings.

Masaki Suenaga, Adjunct, Ph.D., University of California, Berkeley: Superconducting alloys; electron microscopy.

Franklin F.Y. Wang, Ph.D., University of Illinois: Magnetism; dielectrics; physical ceramics.

David O. Welch, Adjunct, Ph.D., University of Pennsylvania: Kinetics of diffusion, energetics; crystal lattice defects; radiation effects.

Associate Professors

Clive R. Clayton, Ph.D., University of Surrey: Corrosion; ESCA.

Joseph Jach, D.Phil., Oxford University: Chemical reactivity of solids.

Assistant Professors

Jeremy Q. Broughton, Ph.D., Cambridge University: Molecular dynamics; computer simulation; electronic materials.

Alexander H. King, D.Phil., Oxford University: Electron microscopy; crystal defects.

Diane M. Vanderwalker, Ph.D., Massachusetts Institute of Technology: Phase transformations; dislocations; electron microscopy.

John B. Warren, Adjunct, Ph.D., University of Florida: Analytical electron microscopy; X-ray fluorescence; semiconductor defects.

Teaching Assistants

Estimated number: 11

The Department of Materials Science and Engineering offers a wide range of interdisciplinary undergraduate programs in conjunction with other science and engineering departments on campus. These programs provide basic training for prospective graduates who can enter a wide range of industries or proceed to further graduate studies in engineering fields. These joint programs are aimed at the materials aspect of mechanical engineering, electrical engineering, physics, and chemistry. Within the framework of the Mechanical Engineering Program, a materials option is available using the following four courses as technical electives: ESG 302, ESM 302, 306, and 307. Individualized programs are also available in biomedical materials, electronic materials, environmental properties of materials, and materials in energy conversion.

B.E./M.S. Program

An engineering or engineering chemistry student may apply at the end of the junior year for admission to this special program, which will lead to a Master of Science degree in Materials Science and Engineering and a Bachelor of Engineering or Bachelor of Science degree at the end of the fifth year. In the senior year, a student in the program takes 3 credits of ESM 599, which for engineering students replace 3 credits of ESC, ESE, or ESG 441, and 3 credits of a graduate course, which replace 3 credits of technical electives. In the fifth year the student will take 24 graduate credits, of which at least 15 credits are coursework and 6 credits are ESM 599. The advantages of this program over the regular M.S. program are that a student may start his or her M.S. thesis in the senior year, and that he or she needs only 24 credits in the fifth year as opposed to 30 credits for a regular M.S. student. For details of the M.S. degree requirements, see the *Graduate Bulletin*.

Engineering Chemistry Program

The engineering chemistry major combines work in the Department of Materials Science and Engineering and the Department of Chemistry. See a description of this program on page 215.

The Physics of Materials Program

Physics majors who wish to pursue a career in engineering physics, particularly in the application of solid-state physics to materials science and engineering, are encouraged to take part in this program. In addition to completing the requirements for the B.S. in physics, these students take courses during the junior and senior years in the Department of Materials Science and Engineering. After the successful completion of a minimum of five courses in the Department of Materials Science and Engineering, the student would be eligible for admission to the master's degree program in materials science and engineering. Interested students should consult the Chairperson of the Department of Materials Science and Engineering in their junior year.

Courses

See p. 200, Restrictions on Credits, Course Prerequisites, and Course Numbering.

ESM 475 Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that will supplement a lecture course. The student will receive regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: Senior standing as an undergraduate major within the College; a minimum grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department
Fall and spring, 3 credits

Technical Electives

ESM 302 Materials Design and Techniques

The relationship between the microscopic structure of materials and their macroscopic properties will be studied in a laboratory/lecture course in which the student will perform investigations using research grade equipment. Techniques for

the production of new materials or the modification of existing materials in order to satisfy design criteria for engineering applications will be discussed and carried out in the laboratory. Topics such as crystal growth, impurity doping (e.g., in semiconductors), heat treatment, precipitation, and solute hardening will be covered. The effects of such treatments upon the structure of a wide range of materials (metals, semiconductors, ceramics, and glasses) will be studied using X-ray diffraction, and optical and electron microscopy. The effects of structural change upon the mechanical, electrical, magnetic, optical, and environmental-sensitive properties of materials will be measured and correlated with the controlling treatments.
Prerequisite: Permission of instructor
Fall, 3 credits

ESM 306 Mechanical Properties of Engineering Materials

A unified approach for all solid materials will be made with regard to the correlation between microstructure and their macroscopic mechanical properties. The course deals with various testing techniques for delineating mechanical properties of materials, considering elasticity, anelasticity, plasticity, dislocation theory, cohesive strength, fracture, and surface wear. Attention is given to strengthening mechanisms for solids, metals, ceramics, and polymers, with a view toward learning how manipulation of microstructure can be used to design materials of specified properties. Discussion of the various engineering applications of materials and of materials selection for a number of specified tasks is pursued.
Prerequisite: Permission of instructor
Spring, 3 credits

ESM 307 Physical Metallurgy

A study will be made of the physical and mechanical properties of a wide range of metals and alloys, with special reference to engineering practice. Industrial processing and heat treatment of ferrous alloys will be emphasized. Lecture, demonstrations, and laboratories.
Prerequisite: ESG 332
Fall, 3 credits

ESM 309 Thermodynamics of Solids

The application of thermodynamics to analysis of phase equilibria and reactions in solids. Topics include ideal and real

solutions, phase equilibrium diagrams, first and higher order phase transitions, and thermodynamics of diffusion, oxidation, and corrosion reactions.

Prerequisite: ESG 301 or 302
Fall, 3 credits

ESM 310 Kinetic Processes in Solids

Atomistic rate processes in solids will be studied, with emphasis on diffusion in crystals. Theory of diffusion and experimental techniques will be developed, and the role played by a broad class of crystalline imperfections will be examined. Topics will include annealing of deformed materials, kinetics of defect interactions, thermally controlled deformation, kinetics of nucleation and growth, and solidification and precipitation.

Prerequisite: ESG 302 or 332
Spring, 3 credits

ESM 315 Phase Transformation in Solids

A review of the processes by which structures are changed in the solid state. Classical nucleation theory including homogeneous and heterogeneous mechanisms. Diffusional and diffusional growth mechanisms. Transformation kinetics.

Prerequisite: ESG 332
Spring, 3 credits

ESM 325 Diffraction Techniques and Structure of Solids

The structure of solids can be studied using X-ray, neutron, and electron diffraction techniques. X-ray diffraction techniques are emphasized in this introductory course. Topics covered include coherent and incoherent scattering of radiation, structure of crystalline and amorphous solids, stereographic projection, and crystal orientation determination. The concept of reciprocal vector space is introduced early in the course and is used as a means of interpreting diffraction patterns. Laboratory work in X-ray diffraction patterns is also included to illustrate the methods.

Prerequisite: ESG 332
Fall, 3 credits

ESM 327 Solid Crystal Surfaces

Description and explanation of the experimental methods currently used for the study of solid crystal surfaces. Introduction to two-dimensional crystallography. Discussion of the atomic structure of surfaces of metals, semiconductors, and insulators. Studies of the electronic structure, surface states, surface defects, and of absorption/desorption processes.

Prerequisite: ESG 281 or PHY 251
Spring, alternate years, 3 credits (not offered in 1985-86)

ESM 335 Introduction to Polymers

An introductory survey of the physics, chemistry, and technology of polymers. The topics covered include classification of polymers, molecular forces and bonds, structure of polymers, measurement of molecular weight and size, rheology and mechanical properties, thermodynamics of crystallization, polymerization mechanisms, and commercial polymer production and processing.

Prerequisite: ESG 332
Fall, 3 credits

ESM 336 Electronic Materials

The properties of intrinsic and extrinsic semiconductors are discussed with particular attention first to the equilibrium distribution of electrons in the bands and then to the non-equilibrium transport of charge carriers. The properties and applications of photoconductors and of luminescent materials are then described. The concept of stimulated emission is introduced, laser operation explained, and laser materials discussed in relation to their applications in science and technology. Other topics considered are the properties of magnetic materials, of dielectric materials, and of superconductors.

Prerequisite: ESG 333
Fall, 3 credits

ESM 337 Dielectric and Magnetic Materials

A survey of the properties of dielectric and magnetic materials pertinent to their application in modern technology. Emphasis is given to the practical material parameters which determine their uses.

Prerequisite: ESM 336
Spring, 3 credits

ESM 347 Physical Chemistry of Metal-Gas and Metal-Liquid Interfaces

The behavior and chemical properties of solid-gas and solid-liquid interfaces. Adsorption and the specific factors influencing (a) heterogeneous catalysis on gas-solid interfaces and (b) oxidation and reduction processes at metal-liquid interfaces will be described. Examples will be drawn from industrial processes to describe these effects. May not be taken for credit in addition to the discontinued ESM/CHE 346 or 348. Crosslisted with CHE 347.

Prerequisites: CHE 302; PHY 102
Spring, 3 credits

ESM 351 Materials in Medical and Dental Sciences

A thorough survey of the uses of materials in the medical and dental sciences. Current research and the problems encountered in each area will be reviewed. Topics include general considerations of materials requirements; corrosion and wear under physiological conditions; mechanical stress; interaction of materials with blood and the problems of clotting; transport of biological substances through membranes; application to the development of artificial arteries, hearts, heart valves, oxygenators, artificial kidneys, and other organs; bone and dental implants.

Prerequisite: Permission of instructor
Spring, 3 credits

ESM 352 Materials in Energy Conversion

The efficiency of energy conversion devices is limited by the availability and properties of essential materials. The use of materials in energy conversion systems is examined, with emphasis on advanced devices such as magnetohydrodynamics, thermoelectrics, thermionic devices, solar energy converters, and fuel cells. The way in which materials properties influence device capability is analyzed, and factors controlling energy output and conversion efficiency are explained. Materials problems in energy storage systems are examined.

Prerequisite: ESG 332 or 333
Spring, 3 credits

ESM 355 Processing of Materials

The mechanical and thermal processing of a wide range of metallic and nonmetallic materials will be reviewed. Both traditional and more modern forming operations will be examined. Recently developed schemes of thermomechanical treatment and thermal processing for the control of microstructure and properties will be explored.

Prerequisite: ESG 332
Spring, 3 credits

ESM 499 Research in Materials Science

A course that involves the student in an independent research project with supervision by the faculty. Permission to register requires that the student have an average grade of B in all engineering courses and the agreement of a faculty member to supervise the research. Only three credits of research electives (AMS 487, CSE 487, ESE 499, ESM 499, ESC 499, EST 499) may be counted toward fulfillment of technical elective requirements.

Fall and spring, 3 credits, repetitive

Department of Mechanical Engineering

Professors

Abraham L. Berlad, Emeritus, Ph.D., Ohio State University: Combustion; energy technology.

Robert D. Cess, Ph.D., University of Pittsburgh: Planetary atmosphere; climatology sciences.

Fu-Pen Chiang, Ph.D., University of Florida: Experimental stress analysis; solid mechanics.

Stewart Harris, Ph.D., Northwestern University: Physics of fluids; environmental engineering.

Thomas F. Irvine, Jr., Ph.D., University of Minnesota: Heat transfer; thermodynamics.

Richard S.L. Lee, Ph.D., Harvard University: Suspension flow; fire research; bio-fluid mechanics.

Ting W. Lee, Eng. Sc. D., Columbia University: Robotics; design optimization.

Edward E. O'Brien, Chairperson, Ph.D., The Johns Hopkins University: Fluid mechanics; turbulence.

George Stell, Ph.D., New York University: Thermodynamics; statistical dynamics.

James Tasi, Ph.D., Columbia University: Mechanics of solids.

Prasad Varanasi, Ph.D., University of California, San Diego: Planetary spectroscopy.

Ching H. Yang, Ph.D., Lehigh University: Structural design; energy technology; combustion theory.

Associate Professors

John Caldwell, Ph.D., University of Wisconsin: Astronomy.

Sultan Hameed, Ph.D., University of Manchester: Atmospheric physics and chemistry.

Joseph Hagan, Ph.D., New York University: Planetary atmospheres; satellite meteorology.

Lin-Shu Wang, Ph.D., University of California, Berkeley: Thermodynamics.

Assistant Professors

Robert E. Drubka, Ph.D., Illinois Institute of Technology: Turbulence; experimental fluid mechanics.

Jane L. Fox, Ph.D., Harvard University: Ionospheric chemistry.

Jakov Karni, Ph.D., University of Minnesota: Heat transfer and fluid dynamics.

Asher Rubinstein, Ph.D., Brown University: Solid mechanics; fracture mechanics.

Teaching Assistants

Estimated number: 22

In addition to participating in the program leading to the Bachelor of Engineering degree in engineering science (described on p. 216), the Department of Mechanical Engineering offers the Bachelor of Engineering in mechanical engineering. This major is designed to meet the special needs of the student who wishes to pursue in-depth studies in the area of mechanical engineering as preparation for either a professional career or graduate study.

Mechanical engineering is a broad field concerned with all aspects of the planning, design, development, manufacture, and evaluation of energy conversion, power generation, environmental control systems, land and marine transport vehicles, and production machines. These concerns, in recent times, are made evident in mechanical engineers' special interest in areas typified by high-speed transportation, control of pollution from power-producing devices, noise abatement, and new sources of power such as fuel cells, solar energy, and nuclear reactors.

In addition to studies in the areas of humanities and social sciences, and the engineering core requirements, mechanical engineering majors must take the mechanical engineering concentration. This consists of courses in technical drawing, manufacturing processes, kinematics and design

processes, applied thermodynamics, heat and mass transfer, and mechanical engineering laboratory. Although mechanical engineering is broad in scope it is still possible for the student to obtain a measure of specialization through his or her choice of elective courses, which can be in the areas of power/energy, or mechanical engineering design, including structural analysis and design. The requirements for the mechanical engineering degree and a typical course sequence are given below.

B.E./M.S. Program

An engineering student may apply at the end of the junior year for admission to this special program, which will lead to a Master of Science degree and a Bachelor of Engineering degree (either in mechanical engineering or engineering science) at the end of the fifth year. The student entering the program will, during the senior year, begin the work of the master's thesis (a thesis is required and not optional for the students in the program) by registering in the course ESC 440. The student must take 3 credits of ESC 599 in place of 3 credits of ESC 441 and 3 credits of a graduate course in place of 3 credits of a technical elective. In the fifth year of the program the student will take a minimum of 18 graduate course credits and three credits of research. He or she must also submit an acceptable master's-level thesis.

Degree Requirements— Mechanical Engineering

	Credits
A. Total credits: 128	
B. University writing requirement, p. 199	3
C. College of Engineering and Applied Sciences distribution and residence requirements, p. 199-200	18
D. Engineering Concentration Requirements:	
1. Mathematics:	
MAT 131, 132, 221 and AMS 361	15
2. Sciences:	
PHY 101, 102, 251 (or ESG 281) and CHE 131 or 141, 133 or 143	17

- 3. Computer Science:
CSE 111 or 114 3
- 4. Laboratories:
ESG 211, 312, 317 6
- 5. Mechanics:
ESG 301 Thermodynamics 4
ESG 261 Particle and Rigid Body Mechanics 4
ESG 363 Mechanics of Solids 4
ESG 364 Mechanics of Fluids 4
- 6. Materials Science:
ESG 332 Structure and Properties of Materials 4
- 7. Electrical Sciences:
ESG 271 Electrical Sciences I 4
- 8. Engineering Synthesis and Design: Requirements satisfied through the project phase of ESC 310, 410, 440, and 441 12
- E. Mechanical Engineering Core Courses:
The following courses must be taken to satisfy the mechanical engineering core requirements:
ESC 202 Technical Drawing 3
ESC 305 Heat and Mass Transfer 3
ESM 355 Processing of Materials 3
ESC 398 Thermodynamics II 3
- F. Technical Electives:
Central to the engineering curriculum is concentrated study to achieve a depth of understanding of one or more of the engineering disciplines. Of the 15 required credits of technical electives at least 9 credits must be from courses listed below under either 1 or 2 or both. Of the 9 credits at least 3 credits must be from courses marked with an asterisk (*), which are the designated mechanical engineering design electives. Other approved technical elective courses will be added to the list from time to time. Current listings can be obtained from the Mechanical Engineering Department.
- 1. Structural Analysis and Design
Courses: ESC 330, 333*, 334*, 342, 381, 383.
- 2. Power and Energy Systems
Courses: ESC 323, 350, 360, 361*, 393, 394, 395, 397.
No more than 3 credits of ESC 499 may be used. 15

- G. Open Electives and Other Requirements:
Any undergraduate University course offered for academic credit may be chosen for open elective credits. No more than three credits of physical education can be used to satisfy open elective requirements. Graduate-level courses may be taken to satisfy either open elective or technical elective requirements with approval. No more than six credits of ESC 499 may be used. 3
- Total 128

- H. Minimum Grade Requirements:
In addition to the University grade point requirement, all students must obtain a 2.0 average for the following courses: ESG 261, 301, 317, 363, 364; ESC 305, 310, 398, 410.
- I. All courses taken to satisfy requirements D through F must be taken for a letter grade.

Sample Course Sequence Satisfying Minimum Requirements for a B.E. in Mechanical Engineering

Note: HUM/SOC elective courses must be chosen to satisfy College distribution requirements on pp. 199-200.

Freshman	Credits
<i>Fall</i>	
MAT 131	4
PHY 101	4
EGC 101	3
HUM/SOC elective	3
HUM/SOC elective	3
Total	17

<i>Spring</i>	
MAT 132	4
PHY 102	4
CSE 111	3
ESC 202	3
HUM/SOC elective	3
Total	17

Sophomore	
<i>Fall</i>	
MAT 221	3
ESG 281 or PHY 251	4
CHE 131 or 141	4
CHE 133 or 143	1
ESG 261	4
Total	16

<i>Spring</i>	
AMS 361	4
ESG 211	2
ESG 271	4
ESG 363	4
HUM/SOC elective	3
Total	17

Junior	
<i>Fall</i>	
ESG 312	2
ESG 301	4
ESG 364	4
ESG 332	4
HUM/SOC elective	3
Total	17

<i>Spring</i>	
ESG 317	2
ESC 305	3
ESC 310	3
ESC 398	3
HUM/SOC elective	3
Total	14

Senior	
<i>Fall</i>	
ESC 440	3
ESC 410	3
Technical elective	3
Technical elective	3
Design technical elective	3
Total	15

<i>Spring</i>	
ESC 441	3
Technical elective	3
Technical elective	3
ESM 355	3
Open elective	3
Total	15

Courses

See p. 200, Restrictions on Credits, Course Prerequisites, and Course Numbering.

ESC 205 Introduction to Atmospheric Science

The nature and causes of atmospheric phenomena. Basic physical and chemical processes and energetics. Atmospheric thermodynamics, hydrostatics, dynamics, kinematics. Atmospheric wind systems and pressure patterns, clouds and precipitation, severe storms. Crosslisted with ATM 205. An open elective.

Prerequisites: PHY 101; MAT 126 or 131 or 141

Spring, 3 credits

ESC 440 Engineering Design I

Lectures by faculty and visitors on typical design problems encountered in engineering practice. During this semester each student will choose a senior design project for Engineering Design II. A preliminary design report is required.

Prerequisites: ESC 312, 317; CSE 111 or 114

Fall, 3 credits

ESC 441 Engineering Design II

Student groups carry out the detailed design of the senior projects chosen during the first semester. A final and detailed design report must be prepared.

Prerequisite: ESC 440

Spring, 3 credits

ESC 475 Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that will supplement a lecture course. The student will receive regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: Senior standing as an undergraduate major within the College; a minimum grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department

Fall and spring, 3 credits

Technical Electives

For ESC majors a maximum of 6 credits of technical electives may be chosen from ESC 302, 333, 372 and from courses listed as technical electives in other departments of CEAS.

ESC 202 Fundamentals of Technical Drawing

Undertakes a thorough study of basic rendering techniques and skills required for

technical drawing including orthographic axonometric projections, rotations, and perspective. Drafting techniques such as line quality, lettering, and accuracy will be emphasized. The final four weeks will consist of an individual project which reflects the student's interests and reinforces the material taught in the course.

Fall and spring, 3 credits

ESC 305 Heat and Mass Transfer

The fundamental laws of momentum, heat and mass transfer, and the corresponding transport coefficients. Principles of steady-state and transient heat conduction in solids are investigated. Laminar and turbulent boundary layer flows are treated, as well as condensation and boiling phenomena, thermal radiation, and radiation heat transfer between surfaces. Applications to heat transfer equipment are covered throughout the course.

Prerequisite: ESC 301 and 364

Spring, 3 credits

ESC 310 Machine Kinetics and Design

Analysis of displacements, velocities, accelerations, and associated forces in plane motion mechanisms; applied stress analysis; theories of failure for structural elements and machine components; study of the fundamental principles of design as applied to mechanical components such as bearings, gears, shafting, springs, screws, belts, and clutches under both static and dynamic loading; introduction to design thinking.

Prerequisite: ESC 363

Spring, 3 credits

ESC 323 Combustion

Lectures and laboratory work designed as an introduction to the fundamentals of combustion processes: combustion theory; experimental properties of the ignition, quenching, propagation, and stability of flames; explosions and detonations; combustion processes and air pollution; radiative properties of flames; dust explosions. Applications are to modern systems.

Prerequisite: ESC 301

Fall, 3 credits

ESC 328 HVAC and Energy Conservation

Engineering performance; efficiency; and applications of heating, ventilating, and air conditioning technology. Relation of energy conversion and storage systems to energy conservation in the home, commerce, industry, and transportation.

Corequisite: ESC 301

Spring, alternate years, 3 credits (not offered in 1986-87)

ESC 330 Structural Analysis

Structural stability. Statically determinate and indeterminate structures. Analysis of trusses and frames in two dimensions. Displacement of structures using the method of virtual work. Method of superposition for analyzing statically indeterminate structures. Slope-deflection equations and moment distribution.

Prerequisite: ESC 363

Fall, alternate years, 3 credits (not offered in 1985-86)

ESC 333 Reinforced Concrete Design

Introduction to concrete design code: foundation planning and general information; design of reinforced concrete slabs, girders and columns; pile foundation and spread footing; and prestressed concrete beam design.

Prerequisite: ESC 363

Spring, alternate years, 3 credits (not offered in 1986-87)

ESC 334 Structural Steel Design

Introduction to structural steel design codes: analysis of loading; design of steel tension and compression members, beams, built-up sections, composite sections, and riveted, bolted, and welded connections; design of steel buildings; plastic design and analysis.

Prerequisite: ESC 363

Fall, alternate years, 3 credits (not offered in 1986-87)

ESC 336 Soil Mechanics

Identification of soils; seepage problems; influence of porewater pressure on stress and compressibility; theory of consolidation and settlement; strength theory and conditions of failure.

Prerequisites: ESC 363 and 364

Fall, alternate years, 3 credits (not offered in 1986-87)

ESC 342 Introduction to Experimental Stress Analysis

The concepts of three-dimensional stress and strain, their transformation laws, and their mutual relationships will be discussed in detail. Results from theory of elasticity as pertinent to experimental stress analysis will also be presented. Experimental techniques studied include two-dimensional photoelasticity, resistance strain gauge, moiré method, brittle coating, and analog methods. The application of different techniques to the measurement of stress and strain in models as well as actual structures will be demonstrated. Students will form small groups and each group will be assigned different laboratory projects to gain experience in various experimental stress analysis methods.

Prerequisite: ESC 363

Fall, 3 credits

ESC 345 Theoretical Meteorology

An introduction to the quantitative interpretation of the thermal and dynamical structure of planetary atmospheres. Topics to be covered include hydrostatic equilibrium, hydrostatic stability and convection, solar and terrestrial radiation, the atmospheric equations of motion for a rotating planet, and atmospheric energy relationships and general circulation. Crosslisted with ATM 345.

Prerequisite: ESC 205

Fall, alternate years, 3 credits (not offered in 1986-87)

ESC 346 Dynamic Meteorology

Introduction to the structure and dynamics of the large-scale atmospheric motions that are responsible for weather and climate. Topics will include principles of fluid dynamics; Coriolis force, geostrophic equilibrium, and the Proudman-Taylor theorem; circulation and vorticity; baroclinic instability, cyclogenesis, frontogenesis, and the weather systems; climate and the general circulation of the atmosphere. Crosslisted with ATM 346.

Prerequisite: ESC 205

Fall, 3 credits

ESC 348 Atmospheric Physics

An investigation of the relation between atmospheric phenomena and the nature of matter as expressed in the principles of physics. Topics studied include gravitational effects, thermodynamic properties of atmospheric gases, formation and growth of cloud particles, atmospheric electricity, solar and terrestrial radiation, atmospheric signal phenomena, atmospheric motions, and heat and mass transfer in the atmosphere. Crosslisted with ATM 348.

Prerequisite: PHY 102

Spring, alternate years, 3 credits (not offered in 1985-86)

ESC 350 Alternate Energy Technologies

An overview of the principles, technology developments, and applications of energy sources other than fossil or nuclear fuels, with emphasis on solar and wind energy. The approach is from a point of view of basic thermodynamics, effective use of given alternate energy technologies matched to appropriate tasks, and related economic considerations. Specific areas of study include solar hot water, active and passive solar heating and cooling systems, photovoltaics, types of wind generators and their conversion systems, and heat pumps. Selected topics in areas such as energy conservation, transportation, hydropower, or bio-mass will also be surveyed as appropriate.

Prerequisite: ESC 301

Fall, alternate years, 3 credits (not offered in 1985-86)

ESC 355 Applied Stress Analysis

A study of structures with emphasis on internal stress analysis. A review of concepts of stress, deformation, and material behavior under various stress conditions. Introduction to the theories of elasticity and plasticity. Principles of virtual work and minimum energies, and their application in structured analysis. Torsion and plane problems of elasticity and initiation of plastic flow. Analysis of plates weakened by a hole or crack.

Prerequisite: ESC 363

Spring, alternate years, 3 credits (not offered in 1985-86)

ESC 360 Numerical Solutions to Engineering Problems

Consideration of numerical methods used to solve differential and integral equations frequently encountered in engineering analysis and design. Finite difference and finite element formulations will be examined as well as the solutions of systems of linear algebraic equations by matrix and iteration techniques. Examples will be drawn from fluid mechanics, electricity, elasticity, thermodynamics, and heat transfer. Students will solve a number of computer problems as semester projects.

Prerequisite: ESC 305

Spring, 3 credits

ESC 361 Airfoil Design

Unconfined flow about an airfoil can be described approximately by a boundary-layer flow near the surface and by potential flow elsewhere. This course develops both areas of fluid dynamics and then approaches the viscous airfoil design problem. The technique is indirect; shape of the airfoil is computed from a potential flow distribution that is consistent with a desired boundary layer development. The design of an airfoil with specified characteristics will be required of each student in the course. An efficient computer program developed from low speed airfoils is available for this purpose.

Prerequisite: ESC 364

Spring, alternate years, 3 credits (not offered in 1985-86)

ESC 362 Glider Design

Students will explore the design process and document the design of a model glider in a notebook. In parallel, aerospace design will be discussed and illustrated; design goals, synthesis, parametric studies, etc. Selected designs will be discussed to explain their design rationale.

Prerequisite: ESC 364

Spring, alternate years, 3 credits (not offered in 1985-86)

ESC 365 Design of Mechanisms

Motion analysis using vector mathematics, complex variables, and graphical methods. Geometry of motion: centrodes, analytical representation of plane motion the Euler Savary equation, and Bobillier's theorem. Linkages and cams. Synthesis of mechanisms: two- and three-position syntheses, Freudenstein's method, and optimal synthesis methods.

Prerequisite: ESC 310

Spring, alternate years, 3 credits (not offered in 1985-86)

ESC 381 Structural Dynamics

The dynamic response of engineering structures is studied for steady state and transient load conditions. Topics studied are single degree of freedom system; multi-degree of freedom system with normal coordinates; dynamic response of elastic strings, rods, and beams to mechanical loading; effect of viscoelastic behavior.

Prerequisite: ESC 363

Spring, alternate years, 3 credits (not offered in 1985-86)

ESC 393 Engineering Fluid Mechanics

This course has two objectives: to study the application of the principles of fluid mechanics to important areas of engineering practice such as turbomachinery, hydraulics, and wave propagation; and to prepare students for advanced coursework in fluid dynamics. As such it extends the study of viscous effects, compressibility, and inertia begun in ESC 364.

Prerequisite: ESC 364

Spring, 3 credits

ESC 394 Fluids and Heat Transfer Laboratory

Students investigate experimentally the behavior of fluids in situations which have proved to be seminal in the development of fluid dynamics. Experiments are undertaken on air or water flow over submerged objects, through jets and nozzles in a channel, and through nonisothermal systems.

Prerequisites: ESC 317; ESC 305

Corequisite: ESC 364

Fall, 3 credits

ESC 395 Jet Propulsion Systems

Basic principles of operation and performance of jet propulsion systems (air breathing and rocket). Analysis of flow-through rotating machines, combustors, inlets, and nozzles. Component matching. Circle analysis of turbojet, turbofan, and ramjet engines. Liquid and solid propellant rockets.

Prerequisites: ESC 301 and 364

Spring, 3 credits

ESC 397 Air Pollution and Its Control

A detailed introduction to the causes, effects, and control of air pollution. The pollutants discussed include carbon monoxide, sulfur oxides, nitrogen oxides, ozone, hydrocarbons, and particulate matter. The emissions of these gases from natural and industrial sources and the principles used for controlling the latter are described. The chemical and physical transformations of the pollutants in the atmosphere are investigated and the phenomena of urban smog and acid rain are discussed. Crosslisted with ATM 397.

Prerequisites: PHY 102; CHE 131 or 141; upper-division standing
Fall, 3 credits

ESC 398 Thermodynamics II

Review of the fundamentals of thermodynamics. Applications of thermodynamics to the analysis of power cycles including Rankine cycles, internal combustion engines, turbojets, and rockets. Consideration of refrigeration cycles including heat pumps. Discussion of combustion, chemical equilibrium, and alternative energy systems.

Prerequisite: ESC 301
Spring, 3 credits

ESC 410 Machine Design II: Analysis and Design of Dynamic Systems

Introduction of fundamental system techniques for the analysis and design of dynamic systems, especially machines. Topics such as control theory, vibrations, dynamics and balancing theory of machines are merged and presented. Analysis and design techniques involving analytical, graphical, and computer-aided methods are described. Case studies of realistic

complexity are illustrated as applications and supplements of the analysis and design theories.

Prerequisite: ESC 310
Fall, 3 credits

ESC 499 Research in Mechanics

A course which involves the student in an independent research project with supervision by the faculty. Permission to register requires that the student have an average grade of B in all engineering courses and the agreement of a faculty member to supervise the research. Only three credits of research electives (AMS 487, CSE 487, ESE 499, ESM 499, ESC 499, EST 499) may be counted toward fulfillment of technical elective requirements.

Fall and spring, 3 credits, repetitive

Department of Technology and Society

Distinguished Teaching Professor

John G. Truxal, Sc.D., Massachusetts Institute of Technology: Technology and society issues; automatic control systems.

Professors

Thomas T. Liao, Graduate Program Director, Ed.D., Columbia University: Science education; educational technology; curriculum development.

Emil J. Piel, Chairperson, Ed.D., Rutgers University: Technology and society issues; decision making; curriculum development.

Marian Visich, Jr., Coordinator of the Minor, Ph.D., Polytechnic Institute of Brooklyn: Technology and society; space mechanics; aerospace propulsion.

Associate Professor

Lester Paldy, M.S., Hofstra University: Physics; science policy and education.

Assistant Professors

David L. Ferguson, Ph.D., University of California, Berkeley: Quantitative methods; computer applications; intelligent tutoring systems; mathematics and engineering education.

Sheldon J. Reaven, Visiting, Ph.D., University of California, Berkeley: Energy issues; science and technology policy; science literacy.

Lecturers

Arthur Gilmore, Executive Director, Center for Industrial Cooperation, M.S., University of Colorado: Aeronautical engineering; engineering economics.

Nina A. Leonhardt, M.S., State University of New York at Stony Brook: Decision making; computer literacy; applications software; user education.

Sandra W. Spanier, Ph.D., The Pennsylvania State University: Communication skills for engineering and applied sciences; technology and the liberal arts.

Teaching Assistants:

Estimated number: 3

The department focuses on the environmental and societal impacts of technological innovation from the viewpoint of the engineer, and also on the engineering concepts which underlie

technological change and which form the bridge from engineering to the other intellectual disciplines. Through these activities, the department also provides one of the vehicles through which Stony Brook interacts with other universities and colleges, pre-college institutions, and professional schools.

The Minor in Technology and Society

The department currently offers two versions of the minor in technology and society. While requirements are specified below, students should arrange for an interview with the faculty of the department at the time they submit their application to enter either program.

The minor for students with majors in the College of Arts and Sciences may be fulfilled by satisfactorily completing six courses:

1. At least four EST courses.
2. Two other College of Engineering and Applied Sciences courses approved by the Director of the Minor.
3. At least three of the six courses must be at the 300 level or above.
4. A 2.5 grade point average must be attained in the six courses.

The minor for students with majors in the College of Engineering and Applied Sciences may be fulfilled by satisfactorily completing six courses:

1. Four EST courses. An EST technical elective cannot be used to satisfy both this requirement and a major in the College of Engineering and Applied Sciences.
2. Two courses not offered by the College of Engineering and Applied Sciences and approved by the Director of the Minor. These could include: SOC 315 Sociology of Technology; PHI 364 Philosophy and Technology; PHI 366 Philosophy of Science: History. AMS 331 Mathematical Modeling is the only exception to the rule.
3. At least three of the six courses must be at the 300 level or above.
4. A 2.5 grade point average must be attained in the six courses.

Courses

See p. 200, Restrictions on Credits, Course Prerequisites, and Course Numbering.

EST 100 Societal Impact of Computers

A critical assessment of the role that computing and data processing play in contemporary society. Following an introduction to the information management capabilities that automation can provide, a study will be made of economic, legal, and moral issues involved in the utilization of these capabilities. Crosslisted with CSE 100.
Fall and spring, 3 credits

EST 190 People, Technology, and Society

In a consideration of the interaction of technology with both the individual and the social institution, case studies of current sociotechnological problems are used to introduce the major concept of modern information science. The concepts include modeling, decision making, feedback, stability, dynamics, probability, and risk. Particular areas include natural resources, energy, waste disposal, transportation, and technology and the consumer. The course includes the science background of social and political decisions, and then consideration of the values of the available alternatives. Primarily intended for non-engineering majors. Cannot be taken for credit by students who have completed EST 192.
Fall and spring, 3 credits

EST 191 Introduction to Technology Assessment (Issues, Methods, and Cases)

Technology assessment and the consideration of alternative futures in relation to social control of technological development. Assessments initiated by a socio-technological problem will also be studied by considering examples such as options for United States energy policy and mass transportation options. A series of innovative small-group activities will be used. Besides the usual seminar format for discussing issues, student activities will include working with analog and digital computer simulations, and doing a term project as part of an interdisciplinary team. Primarily intended for non-engineering majors.

Prerequisite: EST 190 or 192 recommended
Spring, 3 credits

EST 192 Introduction to Modern Engineering

This course is designed to familiarize students with systems and decision-making concepts of modern engineering and technology. The conceptual areas to be studied include engineering approach to problem solving and design, modeling of dynamic systems, and technology assessment. The artificial heart program, solar energy technology, and building access for the handicapped are some of the socio-technological case studies that will be used. Cannot be taken for credit by students who have completed EST 190.
Fall, 3 credits

EST 194 Patterns of Problem Solving

A survey of techniques and methods of problem solving as developed by the engineer and applied scientist. Applications drawn from a broad range of fields. Primarily intended for non-engineering majors. Crosslisted with AMS 194.
Fall, 3 credits

EST 300 Microcomputers in Science and Mathematics for Educators

Effective interactive learning approaches include the use of: computer simulations, microworlds, problem solving via programming, computer-assisted science laboratories, and applications courseware. Course will also involve study of design and evaluation techniques. Primarily designed for future secondary science and mathematics teachers, the focus of this course is on the use of microcomputers in classrooms and laboratories.

Prerequisite: EST/CSE 100
Spring, 3 credits

EST 310 The Exploration of Space

The basic engineering and scientific concepts of the exploration of space. The

main topics covered include the role of man in space and space exploration. The course is primarily intended for non-engineering students.

Prerequisites: One year of college mathematics; upper-division standing
Fall, 3 credits

EST 320 Cybernetics

The basic concepts of cybernetics: control and communication in machines and people. The four principal topics are signals in electronic systems; sensors for signal detection and modification; communication with machines and people; and automatic feedback control, including automation and natural systems. The course is designed primarily for non-engineering students.

Prerequisites: EST 190; one year of college mathematics; upper-division standing
Spring, 3 credits

EST 360 Science, Technology, and Arms Control

A study of the application of scientific technology to natural defense covering nuclear weapons and delivery systems, chemical and biological weapons, conventional weapons systems, defense research and development, arms control and disarmament negotiations, and international technology transfer.

Prerequisites: Upper-division standing; one year of natural science or EST 194
Fall, 3 credits

EST 361 Arms Technology Control Seminar

Students will explore selected issues in the field of arms control and its associated technologies. Topics will include the feasibility of ABM defenses, the technology of verification, and the technology of nuclear weapons production. Limited to 15 students.

Prerequisite: EST 360
Spring, 3 credits

EST 370 Nuclear Proliferation: Technology and Politics

The proliferation of nuclear technology employable for both peaceful and military purposes, the threat it poses to world political and military stability, and the responses made by governments and international organizations. The topic requires the ability to read a diverse array of technical material for which students will need background in both physical and social sciences. Crosslisted with POL 370.

Prerequisites: Upper-division standing; permission of instructor
Spring, 3 credits

EST 390 Communication Skills in Engineering and Applied Science

A course to develop written communication abilities in engineering and the applied sciences. A variety of topics will be considered, such as assembly directions, test procedures and reports, government legislation and regulations, and technical proposals. The student is introduced to the engineering principles behind these topics, examines and critiques documents, and writes technical documents. The object is to become competent in the logical and clear expression of engineering ideas and facts. May be used to satisfy three credits of arts and humanities by College of Engineering and Applied Sciences majors.

Prerequisite: CEAS upper-division students only

Fall and spring, 3 credits

EST 392 Engineering and Managerial Economics

An introduction to the applications of economic and system analysis to decision-making problems arising in engineering and industry. Topics covered include nature of the business enterprise, cash flow and financial statement analysis, the cost of capital, economic life, taxes, analysis under risk and uncertainty, return on investment, and the evaluation of engineering alternatives, budgeting techniques, inventory and critical path techniques, corporate financing, and patent aspects of engineering.

Prerequisite: Upper-division standing in engineering or economics

Fall and spring, 3 credits

EST 393 Production and Operations Analysis

The design, planning, and organizing of resources to develop and manufacture new products or to bring new services on line. The factors affecting product and process design, project planning, facility location and layout, operations scheduling, job analysis, inventory control, material requirements planning, and quality control will be identified and related through analytical and modeling techniques.

Prerequisites: Upper-division standing; ESC or ESE or ESG major
Spring, 3 credits

EST 420 Seminar on Information-Age Society

This seminar considers the characteristics and current trends in telecommunication technology. The communication infrastructure of a major urban area leads to the study of interactive cable television, computer generation of speech, and industrial and governmental applications. On a national scale, satellite and fiber optic communications are considered with both civilian and military implications.

Prerequisite: EST 320

Fall or spring, 3 credits

EST 441 Business Policy, Formulation, and Administration

The problems faced by the general manager in business planning, forecasting, and decision making. Typical case studies relating to establishing objectives and formulating strategies are assigned as a basis for a discussion-oriented class session. Analyses of financial statements, production planning, and organizational structures are involved in arriving at recommendations for action.

Prerequisites: Any three required courses in the business minor program; permission of instructor

Fall and spring, 3 credits

EST 475 Undergraduate Teaching Practicum

Students assist the faculty in teaching by conducting recitation or laboratory sections that will supplement a lecture course. The student will receive regularly scheduled supervision from the faculty instructor. May be used as an open elective only and repeated once.

Prerequisites: Senior standing as an undergraduate in the College; a minimum grade point average of 3.0 in all Stony Brook courses and the grade of B in the course in which the student is to assist; permission of department

Fall and spring, 3 credits

EST 499 Research in Technology and Society

An independent research project with faculty supervision. Permission to register will require an average grade of B in all engineering courses and the agreement of a faculty member to supervise the research.

Only three credits of research electives (AMS 487, CSE 487, ESE 499, ESC 499, ESM 499, EST 499) may be counted toward fulfillment of technical elective requirements.

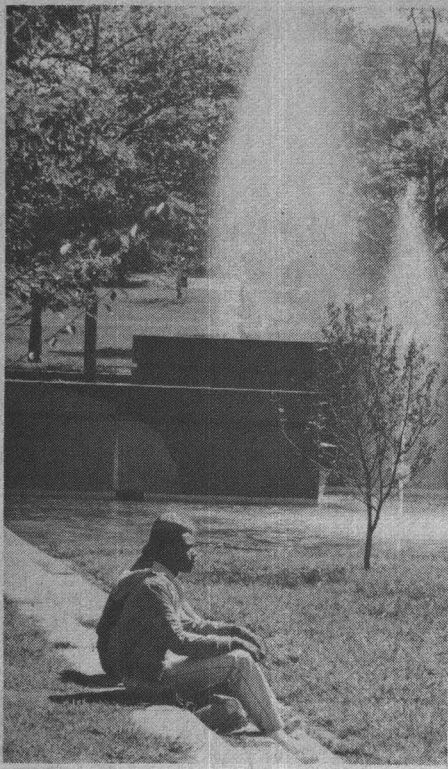
Fall and spring, 3 credits, repetitive

Technology and Society Courses Approved as Engineering Technical Electives

EST 392 Engineering and Managerial Economics

EST 393 Production and Operations Analysis

EST 499 Research in Technology and Society (may be used only once).



W. Averell Harriman College for Policy Analysis and Public Management

Professors

Lee E. Koppelman, part-time, D.P.A., New York University: Regional planning; resource management.

Robert Nathans, Ph.D., University of Pennsylvania: Energy policy.

Dennis R. Young, Ph.D., Stanford University: Decision-making program evaluation; social policy.

Associate Professors

Stanley M. Altman, Ph.D., Polytechnic Institute of Brooklyn: Analytic methods; evaluation of public agencies.

T. Owen Carroll, Ph.D., Cornell University: Analytic methods; energy policy; social policy. Recipient of the State University Chancellor's Award for Excellence in Teaching, 1973-74

Pearl Kamer, part-time, Ph.D., New York University: Application of economic theory to urban, suburban, and regional problems.

Peter Meier, Ph.D., University of Massachusetts: Energy policy.

George Pidot, Ph.D., Adjunct, Harvard University: Using computers to solve policy problems.

Harry Weiner, Dean, S.M., Massachusetts Institute of Technology: Analysis and redesign of public organizations.

Assistant Professors

Theresa McGuire, Ph.D., Princeton University: Economic analysis; tax policy.

Frederick R. Preston, Ed.D., Adjunct, University of Michigan: Cross-cultural management.

Thomas Sexton, Ph.D., State University of New York at Stony Brook: Operations research, especially as applied to the analysis of transportation problems.

Lecturers

Barbara Cohn, B.A., New York University: Analysis of municipal services.

Robert A. Francis, Adjunct, Ph.D., Ball State University: Education policy.

Joan Weinstein, M.A., University of California, Berkeley: Interpersonal relations and intergroup conflict in large bureaucracies.

Teaching Assistants

Estimated number: 5

The W. Averell Harriman College for Policy Analysis and Public Management offers professional training for positions in government agencies at the federal, state, and local levels, and for positions in the private sector that relate to public policy. Although the College's

main program is at the graduate level, its Accelerated Program is open to students who have, during their freshman and sophomore years, demonstrated both an interest in public service careers and an aptitude for quantitative analysis. Graduates work as budget analysts, planners, managers, project leaders, and consultants in agencies dealing with public problems such as energy, transportation, criminal justice, science and technology, health, education, etc.

Most Accelerated Program students receive their baccalaureate degree from the College of Arts and Sciences, in which they choose a major that accepts Policy Analysis and Public Management courses towards fulfillment of requirements. (The social sciences, liberal arts, economics, and political science majors mesh best with the Accelerated Program.) University and College graduation requirements, therefore, are the same as those for Arts and Sciences students (see page 51). Students may choose a major in the College of Engineering and Applied Sciences, in which case their College requirements are the same as those for Engineering and Applied Sciences students (see page 198). Students receive the Master of Science degree in Policy Analysis and Public Management and the appropriate baccalaureate degree at the completion of the third year.

Information can be obtained from the *Graduate Bulletin* and the Director of Education of the W. Averell Harriman College for Policy Analysis and Public Management.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

PAM 311, 312 Introduction to Urban and Policy Sciences

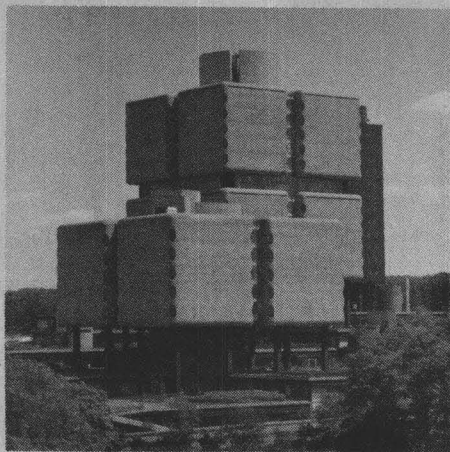
This course covers four related topics, which are not separable nor can they be taken as individual courses. The topics are: *Economic Analysis*—Theory is applied to a number of public policy problems from the outset. Sufficient economic theory is taught to prepare the student for the graduate program, but emphasis is placed on attacking real problems and recognizing lacunae and inadequacies in the present stock of theory. *Administration*—Personnel, information, and control systems are examined, mainly through the case method, with a view toward preparing the student to look for evidences of pathology in public agencies. *Quantitative Methods*—Sets, logic probability, matrices, algebra, and related topics are taught from the viewpoint of creating a tool kit with which the public policy analyst and manager can approach problems that contain nonmathematical as well as mathematical aspects. The computer is introduced in the same way. *Case Studies*—Formal analyses are studied, particularly those on which important public policy decisions have been based (the Coleman report, the Fleischman report on educational financing, the Carnegie Commission report on public television, the Civil Rights Commission report on pupil opportunity, etc.) with a view toward identifying their theoretical underpinnings. *Prerequisite*: Permission of Dean
Fall (311) and Spring (312), 12 credits each semester

PAM 331 Intermediate Economics for Public Policy Analysis

An intermediate-level course on economic theory and analysis for public policy. The course gives a treatment of welfare and efficiency implications of decentralized economies under various degrees of competition; discusses welfare economics; develops the rationale for public activity in a decentralized economic system and the concepts of consumer's surplus, public goods, and externalities; considers the treatment of the distributional implications of public decisions; and discusses pricing and output policies for government industries and finance and their effect on the economy. *Prerequisites*: PAM 311, 312
Fall, 3 credits

PAM 341 Models for Policy Making

Comprehensive overview of the principles of policy analysis in the public sector. Emphasis is placed on developing the student's ability to organize unstructured problems and to evaluate policy alternatives. Case studies of public sector problems in diverse areas such as housing, education, energy, and environmental control are included. *Prerequisites*: PAM 311, 312
Fall, 3 credits



Health Sciences Center

The Health Sciences Center, a major division of the State University of New York at Stony Brook, consists of five professional schools and University Hospital, the major teaching facility for the educational programs of the Center. The schools—Allied Health Professions, Dental Medicine, Medicine, Nursing, and Social Welfare—offer full-time professional education to approximately 1,600 students and conduct programs of research, service, and continuing professional education. Professional, technical, and laboratory resources support the academic activities of the students and faculty.

University Hospital, which opened in February 1980, includes surgical suites, laboratories, emergency and ambulatory care units capable of handling up to 300,000 visits per year, and ancillary facilities. When fully operational, nearly half of the 540-bed hospital will be dedicated to intensive and specialty care.

Specialized services in the hospital include an open heart surgery program, an oncology program, a comprehensive renal dialysis facility, a transplant service, a burn center, full perinatal care (including high-risk obstetrics and neonatal and pediatric intensive care units), acute psychiatric services for adults and children, and a broad-based diagnostic and therapeutic rehabilitation program.

While University Hospital provides a hospital teaching environment for students, the Health Sciences Center also uses the clinical facilities provided for its students in Long Island hospitals and health agencies that have entered into partnership agreements with the Health Sciences Center.

Buildings and Facilities

The Health Sciences schools share instructional space, multidisciplinary laboratories, lecture halls, and the support services of the Division of Laboratory Animal Resources, the Health Sciences Center library, audio-visual and classroom support, and the Office of Student Services.

At present, more than 2,000 skilled professionals from the Long Island region have faculty appointments and participate in the schools of the Center. All Health Sciences Center students, as part of their clinical training or field work, work for a specific time with some of the Long Island health and welfare agencies. Continuing education for many health professions is offered by the schools. The Center also sponsors conferences, workshops, and lectures on major health issues for the general community.

Program Offerings

Current offerings include both undergraduate and post-baccalaureate programs. All undergraduate programs begin in the upper division.

The School of Allied Health Professions offers baccalaureate degree programs in cardiorespiratory sciences, medical technology, physical therapy, and physician's assistant education. Baccalaureate degree programs are also offered by the Schools of Nursing and Social Welfare.

The Health Sciences Center enrolls M.D. and M.D./Ph.D. candidates in the School of Medicine, D.D.S. candidates in the School of Dental Medicine, and master's degree candidates in the Schools of Allied Health Professions, Nursing, and Social Welfare. Postgraduate doctoral degree programs are offered in anatomical sciences, microbiology, oral biology and pathology, pharmacological sciences, and physiology and biophysics.

Admissions Procedures

Most students enter the Health Sciences Center undergraduate programs at the beginning of the junior year. However, students may apply for conditional acceptance as freshmen to programs in the Schools of Allied Health Professions and Nursing. Students accepted to the pre-professional program who successfully complete designated prerequisites will be admitted to the upper-division professional program.

Applications for all undergraduate programs can be obtained from the Office of Student Services in the Health Sciences Center. Applications for most undergraduate programs are available in the fall of the year preceding the year of anticipated matriculation. Admissions are in the fall of each year only. Admission decisions are made by committees in each of the schools; application processing and records are handled in the Health Sciences Center Office of Student Services.

Eligibility

All baccalaureate programs are upper-division programs and last approximately two years. To be eligible for consideration, students must have completed 57 university credits or their equivalent before matriculating in the program to which they seek admission. All programs require specific course prerequisites.

Admission to all undergraduate programs is by formal application only, since admission is on a selective basis. Applications are accepted from both Stony Brook students and from students transferring to Stony Brook from other educational institutions. Stony Brook undergraduate students are not automatically admitted to Health Sciences Center programs; they should note that admission to any of the undergraduate programs is not simply a "change of major."

Minor in Health and Society

This minor, offered through the Department of Community and Preventive Medicine in the School of Medicine, is intended primarily for

students who are preparing for careers in health care: medicine, dentistry, nursing, social welfare, and the allied health professions. It complements the work of students majoring in the humanities and social sciences.

The minor is interdisciplinary in nature. The sequence of possible courses is designed to offer a broad exploration of the relationships between contemporary health care and the humanities and social sciences. It is recommended that students plan the inclusion of this minor within their course selection early in their undergraduate careers. Students are encouraged to complete Part A in the minor requirements before taking HMC 200.

Requirements for the Minor

	<i>Credits</i>
A. Any two individual courses from among the following: BIO 101, 102; HIS 135, 136, 291, 292; HUM 121, 123; PHI 104, 109,	6
B. HMC 200	3
C. Any two individual courses from among the following: ANT 330*; ECO 342*; HIS 316, 323, 351*, 376*; HMC 331; PHI 366, 370; SBS 360; SOC 353*, 390* (Health Care Delivery and Health and Illness sections only); SSI 333	6
D. HMC 487 or 486 (Students will be permitted to take this only after completing A, B, and C above.)	3
Total	18

Notes on the Minor

1. Courses marked with an asterisk (*) have prerequisites in the department of origin; for some, the prerequisite may be waived upon petition.
2. Biology majors may *not* substitute BIO 151, 152 for the courses indicated in part A.

Additional information and advising regarding the minor can be obtained by contacting Professor Nancy Tomes, the coordinator, in the Department of History or an advisor in the Center for Academic Advising.

Courses

Note: Graduate students wishing to work in areas with 300 listings may, by taking independent study (HMC 590), arrange a course of study.

HMC 200 Medicine and Society

An examination of some traditional concerns of the humanities and social sciences as they occur in basic health care and its delivery. Clinical cases will be presented to the class each week by practicing physicians or other health care professionals. Topics will include allocation of scarce resources, issues of dying and killing, experiments on humans, etc. Discussion will focus on the social, historical, ethical, and artistic import of the cases.

Fall or spring, 3 credits

HMC 331 Legal and Ethical Issues in Health Care

This course is intended to introduce students to some of the major ethical and legal doctrines that affect health care professionals. The doctrines will be discussed by addressing specific problem situations. Some of the topics are the right to refuse medical, mental, and social care; the right to life and its limits (e.g., suicide, euthanasia, abortion); the right to receive care; and access to and evaluation of health care delivery. Since the goal of the course is to sensitize professionals to legal and ethical issues like those they will be called upon to resolve, students will be expected to take part in class discussions and do readings. *Alternate years, 3 credits (not offered in 1986-87)*

HMC 486 Practicum in Health and Society

Observation of clinical services in University Hospital or other health care settings, and seminar discussions of readings in humanities and social sciences which deal with problems in contemporary health care. Primarily for pre-health majors at the upper-division level—especially students completing the minor in Health and Society. *Prerequisite:* Permission of instructor *Spring, 3 credits*

HMC 487 Independent Study

Projects must be approved by the department. *Prerequisite:* Permission of instructor *Fall or spring, 1 to 3 credits*

Other Health Sciences Courses Open to Main Campus Undergraduates

The School of Medicine and the School of Dental Medicine also offer courses for elective credit to undergraduate students enrolled in courses of study in all departments of the University. The School of Allied Health Professions and the School of Social Welfare usually open several of their courses each year, on a space-available basis, to students who are not matriculated in a Health Sciences Center program. (See below; also see the Undergraduate Bulletin Supplement.) To register for Health Sciences Center courses numbered 300 and higher, Main Campus students should have completed their freshman and sophomore years, or have earned a minimum of 57 university credits.

Students are not able to pre-register for these courses. They may register by submitting an add card during the Health Sciences Center regular registration or during the add-drop period. Permission of the instructor is required.

The Health Sciences Center academic calendar differs from the Main Campus calendar because the Health Sciences Center programs, with the exception of the School of Social Welfare, are scheduled in modules, each of five weeks' duration. The School of Social Welfare follows the Main Campus academic calendar.

Allied Health Professions

HAS 190 Introduction to the Health Professions

Presents topics of interest to students considering a career as a health professional. Introduces basic concepts of health, factors influencing health care, health care settings, and selected health professions. Professional roles assumed by allied health professionals, nurses, and social workers are explored. Directs students in examining personal, cultural, and social values as they relate to the implementation of these roles. Crosslisted with HNI 190. *Spring, 1 credit*

Anatomical Sciences

HBA 325 Anatomical and Biological Illustration

An introduction to human anatomy for the studio artist who is interested in biological illustration. The course will provide an introduction to techniques of illustration utilizing as subject matter the live model, skeleton, prosection, and cadaver dissection. Details of human anatomy will often be discussed by comparison of humans with other vertebrates. Lectures will precede each laboratory/studio class and involve proportion, topographic, and surface anatomy; bone-muscle relationships and human movement; comparative form of visceral organs; and the comparative anatomy of humans and higher primates. *Prerequisite:* ARS 152 or BIO 101 or 151 *Fall, 2 credits*

HBA 393, 394 Special Topics from the Anatomical Sciences Literature

Tutorial readings in anatomical sciences with periodic conferences, reports, and examinations arranged with the instructor. Open to junior or senior students. *Prerequisite:* Permission of instructor *Fall (393) and spring (394), 1 or 2 credits each semester*

HBA 398, 399 Research Project in Anatomical Sciences

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to junior or senior students. *Prerequisites:* Laboratory experience; permission of the supervising instructor *Fall (398) and spring (399), 2 to 4 credits each semester*

Biomedical Sciences

HBI 398, 399 Research Projects in Biomedical Sciences

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. Project report required. The course may be repeated. *Prerequisites:* Laboratory experience; permission of supervising instructor *Fall (398) and spring (399), 2 to 4 credits each semester*

Dental Health

HDH 301 Independent Readings and Research

The student will conduct his or her research project under the supervision of one or more members of the Department of Dental Health. The student is expected to submit a written report detailing his or her research activities and conclusions. This course is offered for undergraduate students who demonstrate an interest in the health care delivery system of the United States. *Prerequisites:* SOC 390 (Health Care Delivery); approval of department chairperson *Fall and spring, 3 credits*

Microbiology

HBM 320 General Microbiology

A course in microbiology, with emphasis on molecular structure and function of bacteria and viruses, mechanism of antibiotic action and resistance, and immunology. Included are some representative examples of well-known infectious disease processes such as occur with diphtheria. This course satisfies the microbiology requirement for admission to nursing, veterinary, and optometry professional schools. *Prerequisites:* CHE 112 or 131; BIO 229, 231; permission of instructor; CHE 131, 133 recommended *Spring, 3 credits*

HBM 321 General Microbiology Laboratory

Designed to complement the lecture material of HBM 320, the optional laboratory will cover basic and applied microbiological methods. Techniques such as growth of bacteria and liquid and agar media, quantitative methods of determination of bacterial concentrations, antibiotic sensitivity, and Gram-staining are included. For pre-health science professions students. *Prerequisites:* CHE 112 or 131; BIO 229, 231; permission of instructor; CHE 131, 133 recommended *Corequisite:* HBM 320 *Spring, 1 credit*

HBM 393, 394 Special Topics from the Microbiology Literature

Tutorial readings in microbiology with periodic conferences, reports, and examinations arranged with the instructor. Open to junior or senior students. *Prerequisite:* Permission of instructor *Fall (393) and spring (394), 1 or 2 credits each semester*

HBM 398, 399 Research Project in Microbiology

An independent research project under faculty supervision, with emphasis on the

principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to junior or senior students.

Prerequisites: Laboratory experience; permission of the supervising instructor
Fall (398) and spring (399), 2 to 4 credits each semester

Nursing

HNI 190 Introduction to the Health Professions

Presents topics of interest to students considering a career as a health professional. Introduces basic concepts of health, factors influencing health care, health care settings, and selected health professions. Professional roles assumed by allied health professionals, nurses, and social workers are explored. Directs students in examining personal, cultural, and social values as they relate to the implementation of these roles. Crosslisted with HAS 190.
Spring, 1 credit

HNI 290 Introduction to Nursing

This course is designed as an introduction to nursing for students who are considering a career in nursing. The student will be oriented to the nature and scope of the profession of nursing, settings where nursing is practiced, and selected skills basic to nursing practice.

Fall and spring, 2 credits

Oral Biology and Pathology

HD 320, 321 Oral Biology Research I, II

The student will conduct an independent research project under the supervision of one or more members of the Department of Oral Biology and Pathology. The student is expected to submit a written report detailing experimental methods, results, and conclusions. These courses are offered for third-year undergraduate students. A copy of the student's transcript must be submitted with the application.

Prerequisite for HD 320: Permission of department; BIO 152 and CHE 132 and 134 recommended

Prerequisite for HD 321: HD 320
Fall and spring, 4 credits each semester

HD 420, 421 Oral Biology Research III, IV

The student will conduct a research project under the supervision of one or more members of the Department of Oral Biology and Pathology. The student is expected to submit a written report detailing experimental methods, results, and conclusions. HD 420, 421 is offered for fourth-year undergraduate students in Arts and Sciences. A copy of the student's transcript must be submitted with the application.

Prerequisite for HD 420: Permission of department; BIO 152 and CHE 132 and 134 recommended

Prerequisite for HD 421: HD 420
Fall and spring, 4 credits each semester

Pathology

HBP 310 Pathology

A study of the basic mechanisms of disease and the pathophysiology of the important human illnesses. Primarily for Health Sciences Center students; others admitted with special permission.

Prerequisites: BIO 151, 152; permission of instructor

Modules 3 through 6, 3 credits

HBP 390 Understanding Basic Mechanisms of Human Disease

An introduction to the current status of biomedical research on the basic causes of selected human diseases. Each of six topics in human pathology are discussed in two sessions by a departmental faculty member whose own research interests coincide with the specific subject. The first session covers background information while the second session deals with ongoing research in the area. Recitation sessions alternate with the lectures and are designed to review and preview material covered in lecture, to discuss assigned readings in the current literature, and to answer questions developed by the material.

Prerequisite: BIO 361 recommended
Spring, 3 credits

HBP 393, 394 Special Topics from the Pathology Literature

Tutorial readings in pathology, with periodic conferences, reports, and examinations arranged with the instructor. Open to junior or senior students.

Prerequisite: Permission of instructor
Fall (393) and spring (394), 1 or 2 credits each semester

HBP 398, 399 Research Project in Pathology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected

to prepare a report on the project and be able to discuss his or her work. Open to junior or senior students.

Prerequisites: Laboratory experience; permission of the supervising instructor
Fall (398) and spring (399), 2 to 4 credits each semester

Periodontics

HDP 320, 321 Introduction to Periodontal Research

The student will be taught various techniques and procedures used in current periodontal research. The student will be expected to undertake a small research project implementing these techniques.

Prerequisites: CHE 132 and 134; BIO 152; permission of instructor
Fall (320) and spring (321), 1 to 4 credits, repetitive to 8 credits maximum

HDP 420, 421 Research in the Biology and Pathology of Periodontium

An independent research project under faculty supervision with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to upper-division students.

Prerequisites: HDP 320, 321; permission of instructor
Fall (420) and spring (421), 2 to 4 credits, repetitive to 8 credits maximum

Pharmacological Sciences

HBH 372 Pharmacology: Selectivity of Drugs—Its Physical Basis

This lecture and discussion course will begin with a statement of the nature and aims of selectivity. As a necessary introduction to methods of building selectivity into a drug molecule, those basic principles will be discussed that underlie the action of drugs (and other biologically active agents) on cells. The treatment will be at the level of underlying physical and chemical principles and will include, among others, the following topics: the nature of receptors, distribution phenomena, structure-action relationships, drug metabolism, chemotherapy, and pharmacodynamics. The second part of the course deals with the three cardinal principles of selectivity, namely the use of favorable differences in distribution, biochemistry, and cell structure.

Prerequisites: BIO 361; permission of instructor
Fall, 3 credits

Note: Arts and Sciences students may receive no more than a total of 6 credits in a single semester of any combination of courses numbered 393 through 399.

HBH 393, 394 Topics in Pharmacology

Tutorial readings in pharmacology with periodic conferences, reports, and examinations arranged with the instructor. Open to junior or senior students.
Prerequisite: Permission of instructor
Fall (393) and spring (394), 1 to 5 credits each semester

HBH 396, 398, 399 Research Project in Pharmacology

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to junior or senior students.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398), spring (399), and summer (396), 1 to 6 credits each semester

Physiology and Biophysics

HBY 310 Cell Physiology

The physiology of animal cells; excitation, conduction, transduction, transport, motility, secretion, and responses to transmitters and hormones.
Prerequisites: PHY 101 or 103; BIO 230
Spring, 3 credits

HBY 350 Physiology

The normal functioning of human tissues and organs and their regulation by the nervous and endocrine systems. Special emphasis will be given to physiological control systems and the preservation of the constancy of the internal environment. Lectures, conferences, demonstrations. Does not count as an upper-division course for Arts and Sciences students.
Prerequisites: College courses in biology and chemistry; some background in physical science; primarily for Health Sciences students; others by permission of instructor
Modules 1 through 4, 4 credits

HBY 393, 394 Special Topics from Physiology and Biophysics Literature

Tutorial readings in physiology and biophysics and periodic conferences, reports, and examinations arranged with the instructor. Open to junior or senior students.
Prerequisite: Permission of instructor
Fall (393) and spring (394), 1 or 2 credits each semester

HBY 398, 399 Research Project in Physiology and Biophysics

An independent research project under faculty supervision, with emphasis on the principles of experimental design, data collection, evaluation of findings, and reporting of results. The student is expected to prepare a report on the project and be able to discuss his or her work. Open to junior or senior students.
Prerequisites: Laboratory experience; permission of supervising instructor
Fall (398) and spring (399), 2 to 4 credits each semester

Social Welfare

HWC 316 Issues in Death and Dying

An overview of the knowledge, value, policies, and skill bases underlying effective entry-level practice with dying and grieving clients. Covers the interrelationship of psychological, interpersonal, family, institutional, community, and cultural dynamics of dying and grieving.
Fall, 3 credits

HWC 325 Women and Health Care

Identifies the systematic lack of quality in care offered to historically oppressed groups. Identifies rights and special needs of women as patients, family members, and citizens at large, which are infringed upon by laws, administrative policies, professional attitudes, and lack of programs. Seeks to develop new models of care for women which are based on peer control and reviews.
Spring, 3 credits

HWC 345 Individual and Family Treatment of Alcoholics and Substance Abusers

In-depth review of modalities used in the treatment of alcoholics and other substance abusers and their families who develop illness and problems as a result of their relationships with these persons. The various types of treatment settings, self-help groups, and referral sources will be discussed.
Spring, 3 credits

HWC 349 Overview of Gay and Lesbian Issues

Examines the status of homoerotic individuals and groups within the United States in order that the students may assess and intervene toward the goal of liberating lesbian women and gay men. Covers historical and current attitudes, the range of cultural oppression, special concerns of subgroups, relationship and sexual issues, and problems and needs of lesbians and gay men.
Spring, 3 credits

HWC 360 Health Care and the Social Worker

Explores current and potential roles of social workers from the perspective of health care policy concepts. Focuses on ways of influencing health services to best reflect community and individual needs. Emphasizes basic social work and health care concepts and values that inform and effect service, professionalism, and community utilization. Examines specific aspects of health and disease and differential impact upon people's lives.
Fall, 3 credits

HWC 361 Implications of Racism on Social Welfare

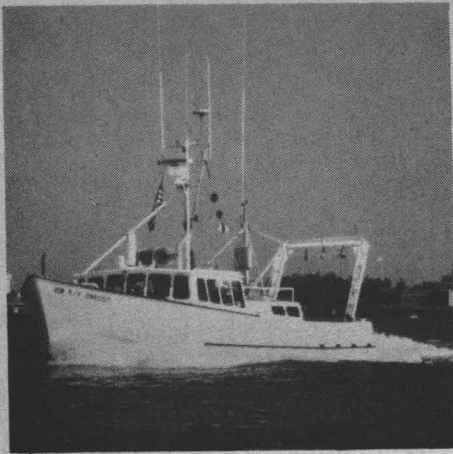
Develops a sense of awareness among participants regarding the effect of racism on the delivery of services.
Fall, 3 credits

HWC 369 Youth in Crisis

Examines the etiology of youth stress using interpersonal, interactional, and developmental perspectives. Covers effective individual and group approaches specifically geared toward helping youth and families cope more effectively.
Fall and spring, 3 credits

HWC 398: Aging: A Family Process

Examines current stereotypic profile of the elderly attending to such factors as "biological decline" vs. social environmental and social structural influences; "being old" vs. aging, a normal growth process; powerlessness vs. changing social roles and self-image. Covers development of necessary assessment, social and legal advocacy, individual family counseling, interdisciplinary and collaborative group approaches, and creative linkage forging.
Fall, 3 credits



Marine Sciences Research Center

Professors

Edward J. Carpenter, Ph.D., University of North Carolina: Nitrogen cycling; phyto- and zooplankton ecology.

Harry H. Carter, Emeritus, M.S., University of California, San Diego: Estuarine and coastal dynamics; turbulent diffusion.

Herbert Herman, Ph.D., Northwestern University: Ocean engineering; undersea vehicles; marine materials.

John L. McHugh, Emeritus, Ph.D., University of California, Los Angeles: Fishery management; fishery oceanography; whales and whaling.

Akira Okubo, Ph.D., The Johns Hopkins University: Oceanic diffusion; animal dispersal; mathematical ecology.

Donald W. Pritchard, Associate Director for Research, Ph.D., University of California, San Diego: Estuarine and coastal dynamics; coastal zone management.

Jerry R. Schubel, Director, Ph.D., The Johns Hopkins University: Coastal sedimentation; suspended sediment transport; coastal zone management.

Lawrence B. Slobodkin, Ph.D., Yale University: Theoretical ecology; marine ecology.

Franklin F.Y. Wang, Ph.D., University of Illinois: Ocean engineering; ocean structurals; energy.

Peter K. Weyl, University of Chicago: Coastal zone planning; physical oceanography.

Associate Professors

Henry J. Bokuniewicz, Ph.D., Yale University: Near-shore transport processes; coastal sedimentation; marine geophysics.

Malcolm J. Bowman, Ph.D., University of Saskatchewan: Oceanography of coastal waters; water quality modeling; microstructure and turbulence.

Robert E. Malouf, Ph.D., Oregon State University: Shellfish biology; aquaculture.

William E. Meyers, Ph.D., Rice University: Carbonates; sedimentology.

Mary I. Scranton, Ph.D., Massachusetts Institute of Technology: Marine geochemistry; biological-chemical interactions in seawater.

Robert E. Wilson, The Johns Hopkins University: Estuarine and coastal ocean dynamics.

Charles F. Wurster, Ph.D., Stanford University: Effects of chlorinated hydrocarbons on phytoplankton communities.

Assistant Professors

Boudewijn H. Brinkhuis, Ph.D., State University of New York at Stony Brook: Physiological ecology of seaweeds and seagrasses.

Douglas G. Capone, Ph.D., University of Miami: Marine microbial ecology and biogeochemistry.

Robert M. Cerrato, Adjunct, Ph.D., Yale University: Benthic ecology; population and community dynamics.

David O. Conover, Ph.D., University of Massachusetts: Ecology of fishes; fishery biology.

Jed Fuhrman, Ph.D., University of California, San Diego: Marine microbial ecology; bacterio-plankton production.

Valrie A. Gerard, Ph.D., University of California, Santa Cruz: Marine macrophyte ecology and physiology.

Sarah G. Horrigan, Ph.D., University of California, San Diego: Marine microbial ecology; nutrient cycling.

Glenn R. Lopez, Ph.D., State University of New York at Stony Brook: Benthic ecology.

James E. Mackin, Ph.D., University of Chicago: Geochemistry of suspended sediment/solution interactions.

William T. Peterson, Ph.D., Oregon State University: Zooplankton population dynamics; fishery oceanography.

Scott E. Siddall, Ph.D., University of Miami: Biology and ecology of molluscan larvae; shellfish mariculture.

Gary A. Zarillo, Ph.D., University of Georgia: Beach and nearshore processes; sediment dynamics.

Teaching Assistants

Estimated number: 4

Physical Facilities

The Marine Sciences Research Center (MSRC) is housed in four buildings—Challenger, Dana, Discovery, and Endeavour, south of the academic core buildings. The MSRC manages the Flax Pond Laboratory, an 0.6-square-kilometer salt marsh system located 7 kilometers from campus.

The MSRC's seagoing facilities include the R/V ONRUST, an 18m steel-hulled vessel designed and built specially for MSRC for work in coastal waters. The ONRUST has a range of approximately 1,300 kilometers and a cruising speed of 10 knots (18.5 km/hr). It is equipped with a "wet" laboratory and an electronics "dry" laboratory. MSRC also operates a number of smaller boats for field work in local embayments and nearshore waters.

Further information can be obtained from the *Graduate Bulletin* and from the graduate program director of the Marine Sciences Research Center.

The Marine Sciences Research Center is the center for research, graduate education, and public service in the marine sciences for the State University of New York system. Two features distinguish MSRC from other leading oceanographic institutions: a clear and persistent focus on the Coastal Ocean; and the commitment to

translate the results of research into forms readily usable by decision-makers in resolving important environmental and management problems of the coastal zone. The MSRC is one of the few comprehensive coastal oceanographic institutions in the nation.

Although the primary instructional programs are at the graduate level, MSRC offers joint, five-year programs with the Department of Earth and Space Sciences and with the College of Engineering and Applied Sciences leading, respectively, to the B.S. degree in geology or the B.E. degree in engineering science, and the M.S. degree in marine environmental sciences. Students interested in entering one of the joint five-year programs should consult with their undergraduate departmental advisor and with the graduate program director of the MSRC.

The MSRC offers a limited number of oceanography and marine sciences courses specifically for undergraduates. In addition, the first-year graduate courses at MSRC are, with permission of the instructor, open to qualified, advanced undergraduate students. The MSRC offers opportunities to undergraduates for research and training in oceanography at sea and in the laboratory.

Courses

See p. 55, Course Credit and Prerequisites, and p. 56, Undergraduate Numbering System.

MAR 101 Long Island Sound: Science and Use

An introduction to one of the region's most important coastal marine environments—Long Island Sound. The course traces the origin and development of the Sound; presents an overview of the natural physical, biological, chemical, and geological processes that characterize it; explores its importance to society and assesses how society's uses of the Sound have affected it; evaluates attempts to manage it; and looks at the future of the Sound.

Fall, 3 credits

MAR 104 Oceanography

An examination of the World Ocean and the processes that control its major features and the life that inhabits it. Suitable for non-science majors.

Spring, 3 credits

MAR 302 Marine Microbiology and Microbial Ecology

Introduction to the evolution, diversity, and importance of the microbial flora of the sea. Lectures will highlight the physiological distinctions and ecological functions of each of the major microbial groups (viruses, bacteria, fungi, protozoans, algae). Particular emphasis will be placed on the role of these microorganisms in many of the elemental (geochemical) cycles of the oceans. Aspects of the microbiota as agents of environmental pollution and/or detoxification will also be discussed.

Prerequisites: BIO 151, 152; CHE 132

Fall, alternate years, 3 credits (not offered in 1986-87)

MAR 333 Coastal Oceanography

Aspects of physical, biological, chemical, and geological processes that characterize coastal marine environments. Topics include such natural phenomena as upwelling, particle transport, benthic/pelagic coupling, and barrier island processes, as well as anthropogenic impacts on the Coastal Ocean.

Prerequisites: MAT 127 or 132 or 142; BIO 151, 152 or CHE 132 or GEO 102/112 or 122

Pre- or corequisite: PHY 102 or 104

Fall, 3 credits

MAR 340 Environmental Problems: Case Histories

A detailed examination of the scientific, social, and legal aspects of four to six important environmental problems, including the benefits and costs of the use of the insecticide DDT; cancer-causing agents in the human environment, such as asbestos, hair dyes, saccharin and tobacco smoke; garbage disposal and bottle bills; energy conservation; and acid rain.

Prerequisites: Upper-division standing; any chemistry or biology course

Fall, 3 credits

MAR 487 Research in Marine Sciences

A student may conduct research for credit. The student must submit a research proposal for approval before the beginning of the credit period and a written report of the work before the end of the credit period. May be repeated once.

Prerequisite: Permission of instructor and of MSRC Undergraduate Studies Committee

Fall and spring, 1 to 3 credits



Directories, Maps, Index

STATE UNIVERSITY OF NEW YORK

General Statement

State University's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New York citizens and comprise the nation's largest, centrally managed system of public higher education.

When founded in 1948, the University consolidated 29 State-operated, but unaffiliated, institutions. In response to need, the University has grown to a point where its impact is felt educationally, culturally, and economically the length and breadth of the State.

Nearly 380,000 students are pursuing traditional study in classrooms or are working at home, at their own pace, through such innovative institutions as Empire State College, whose students follow individualized and often non-traditional paths to a degree. Of the total enrollment, more than 100,000 students are 24 years or older, reflecting State University's services to specific constituencies, such as refresher courses for the professional community, continuing educational opportunities for returning service personnel, and personal enrichment for more mature persons.

State University's research contributions are helping to solve some of modern society's most urgent problems. It was a State University scientist who first warned the world of potentially harmful mercury deposits in canned fish, and another who made the connection between automobile and industrial smoke combining to cause changes in weather patterns. Other University researchers continue important studies in such wide-ranging areas as immunology, marine biology,

sickle-cell anemia, and organ transplantation.

More than 1,000 public service activities are currently being pursued on State University campuses. Examples of these efforts include special training courses for local government personnel, State civil service personnel, and the unemployed; participation by campus personnel in joint community planning or project work; and campus-community arrangements for community use of campus facilities.

A distinguished faculty includes nationally and internationally recognized figures in all the major disciplines. Their efforts are recognized each year in the form of such prestigious awards as Fulbright-Hayes, Guggenheim, and Danforth Fellowships.

The University offers a wide diversity of what are considered the more conventional career fields, such as engineering, medicine, literature, dairy farming, medical technology, accounting, social work, forestry, and automotive technology. Additionally, its responsiveness to progress in all areas of learning and to tomorrow's developing societal needs has resulted in concentrations which include pollution, urban studies, computer science, immunology, preservation of national resources, and microbiology.

SUNY programs for the educationally and economically disadvantaged have become models for delivering better learning opportunities to a once-forgotten segment of society. Educational Opportunity Centers offer high school equivalency and college preparatory courses to provide young people and adults with the opportunity to begin college or to learn marketable skills. In addition, campus-based Educational Opportunity Programs provide counseling, developmental education, and financial aid to disadvantaged students in traditional degree programs.

Overall, at its EOC's, two-year colleges, four-year campuses, and

university and medical centers, the University offers 3,600 academic programs. Degree opportunities range from two-year associate programs to doctoral studies offered at 12 senior campuses.

The 30 two-year community colleges operating under the program of State University play a unique role in the expansion of educational opportunity by providing local industry with trained technicians in a wide variety of occupational curricula; by providing transfer options to students who wish to go on and earn advanced degrees; and by providing the community with yet another source for technical and professional upgrading as well as personal enrichment.

During its brief history, State University has graduated one million alumni, the majority of whom are pursuing their careers in communities across the state.

State University is governed by a Board of Trustees, appointed by the Governor, which directly determines the policies to be followed by the 34 State-supported campuses. Community colleges have their own local boards of trustees whose relationship to the SUNY board is defined by law. The State contributes one-third to 40 percent of their operating cost and one-half of their capital costs.

The State University motto is: "To Learn—To Search—To Serve."

Campuses

University Centers

State University of New York at Albany
State University of New York at Binghamton
State University of New York at Buffalo
State University of New York at Stony Brook

Colleges of Arts and Science

Empire State College
State University College at Brockport
State University College at Buffalo
State University College at Cortland
State University College at Fredonia
State University College at Geneseo

State University College at New Paltz
State University College at Old Westbury

State University College at Oneonta
State University College at Oswego
State University College at Plattsburgh
State University College at Potsdam
State University College at Purchase

Colleges and Centers for the Health Sciences

Downstate Medical Center at Brooklyn
Upstate Medical Center at Syracuse
Health Sciences Center at Buffalo*
Health Sciences Center at Stony Brook*

Agricultural and Technical Colleges

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

Specialized Colleges

College of Environmental Science and Forestry at Syracuse
Maritime College at Fort Schuyler
College of Technology at Utica/Rome
Fashion Institute of Technology at New York City**

Statutory Colleges***

College of Agriculture and Life Sciences at Cornell University
College of Ceramics at Alfred University
College of Human Ecology at Cornell University
School of Industrial and Labor Relations at Cornell University
College of Veterinary Medicine at Cornell University

Community Colleges

(Locally-sponsored, two-year colleges under the program of State University)
Adirondack Community College at Glens Falls
Broome Community College at Binghamton
Cayuga County Community College at Auburn
Clinton Community College at Plattsburgh
Columbia-Greene Community College at Hudson

Community College of the Finger Lakes at Canandaigua
Corning Community College at Corning
Dutchess Community College at Poughkeepsie
Erie Community College at Williamsville, Buffalo, and Orchard Park
Fashion Institute of Technology at New York City**
Fulton-Montgomery Community College at Johnstown
Genesee Community College at Batavia
Herkimer County Community College at Herkimer
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Jefferson Community College at Watertown
Mohawk Valley Community College at Utica
Monroe Community College at Rochester
Nassau Community College at Garden City
Niagara County Community College at Sanborn
North Country Community College at Saranac Lake
Onondaga Community College at Syracuse
Orange County Community College at Middletown
Rockland Community College at Suffern
Schenectady County Community College at Schenectady
Suffolk County Community College at Selden, Riverhead, and Brentwood
Sullivan County Community College at Loch Sheldrake
Tompkins Cortland Community College at Dryden
Ulster County Community College at Stone Ridge
Westchester Community College at Valhalla

*The Health Sciences Centers at Buffalo and Stony Brook are operated under the administration of their respective University Centers.

**While authorized to offer such baccalaureate and master's degree programs as may be approved pursuant to the provisions of the Master Plan, in addition to the associate degree, the Fashion Institute of Technology is financed and administered in the manner provided for community colleges.

***These operate as "contract colleges" on the campuses of independent universities.

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OF NEW YORK
AT STONY BROOK****Members of the Council**

Subject to powers of State University trustees defined by law, the operations and affairs of the State University at Stony Brook are supervised locally by a ten-member Council. Nine are appointed by the Governor; the tenth, a student member with all the rights and responsibilities of the other members, is elected by the student body. All positions listed are correct as of February 1, 1985.

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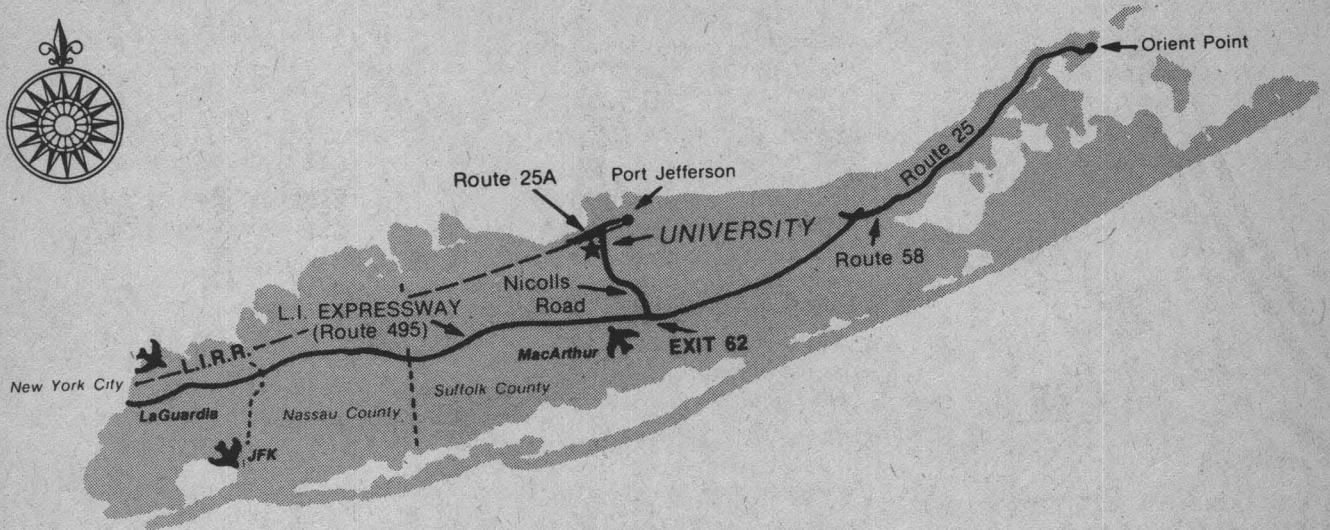
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Bursar

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Director of University Counseling Center

Richard Solo, B.Sc., Ph.D.
Director of Orientation

William Strockbine, A.B., M.A./L.S.
University Registrar



Transportation to Stony Brook

By Car

Take the Long Island Expressway (Route 495) to Exit 62; follow Nicolls Road (Route 97) north for nine miles. Connecticut car ferries run from Bridgeport to Port Jefferson (516-473-0286) and from New London to Orient Point (516-323-2415); call for schedules, reservations.

By Bus

Call Suffolk County Transit (516-360-5700) for schedules, rates and routes for buses to the campus from many local towns.

By Railroad

Take the Long Island Rail Road's Port Jefferson line from Penn Station (Manhattan). Change at Jamaica or Huntington, per timetable, for Stony Brook. Cross tracks for free campus bus.

By Air

Land at Kennedy or LaGuardia Airport, 50 miles west of campus, or at Long Island MacArthur Airport (515-467-6161), 10 miles south of campus. MacArthur has limousine and taxi service to campus.

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Academic Calendar

Fall Semester 1985

August 26, Monday: Foreign students arrive.

August 26-30, Monday-Friday: Final registration and payment (or proper deferral) of fees for all students not previously registered (schedule announced prior to registration). Foreign student orientation.

August 27, Tuesday: Residence halls open for new student check-in.

August 28-30, Wednesday-Friday: Undergraduate student orientation for students not having participated previously.

August 31-September 1, Saturday-Sunday: Residence halls open for returning student check-in.

September 3, Tuesday: **Classes begin;** late registration begins with \$20 late fee assessed.

September 5, Thursday: Senior citizen auditor program registration (telephone 246-3305 for information).

September 13, Friday: Last day to file for December graduation: undergraduates file application at the Office of Records/Registrar; graduate students (except CED) file at Graduate School Office; CED students file at CED Office. Last day for May graduation candidates (undergraduates) to file degree application at Office of Records and receive notification before Advance Registration for Spring Semester.

September 16-17, Monday-Tuesday: Rosh Hashanah recess.

September 18, Wednesday: End of late registration period. Last day for undergraduate students to add a course or to drop a course without a W (Withdrawal) grade being recorded. Last day for all students to drop a course without tuition liability. Last day for undergraduates to apply or change of status to or from full-time/part-time.

September 20, Friday: Classes follow Monday schedule.

September 25, Wednesday: Yom Kippur. Classes not in session (no classes after 4:30 p.m. on September 24).

September 27, Friday: Last day for graduate students to add or drop a course.

October 17, Thursday: Last day for payment of deferred Fall Semester fees.

October 30, Wednesday: Fall quarter housing period ends.

November 1, Friday: Last day for removal of Incomplete and NR (No Record) grades from the Spring Semester and Summer Session. Last day for undergraduate students to withdraw from a course without withdrawing from the University; last day to change courses to or from Pass/No Credit.

November 5, Tuesday: Election Day (classes in session).

November 6-15: Prime Time for students (intensive academic advising period).

November 11, Monday: Advance registration for Spring Semester begins (schedule announced prior to registration).

November 27, Wednesday: Thanksgiving recess begins at close of classes.

December 2, Monday: Classes resume.

December 13, Friday: **Last day of classes;** last day to withdraw from the University. Last day for graduate students to submit theses and dissertations to Graduate School for December graduation.

December 16, Monday: Final examinations begin; final grades due in Registrar's Office 48 weekday hours after last class meeting or scheduled examination.

December 20, Friday: Final examinations end; Fall Semester ends; residence halls close for Fall Semester; winter recess begins at close of examinations.

December 21, Saturday: Intersession housing begins.

January 3, Friday: Last day for departments to submit Completion Statements for December master's and doctoral degree candidates.

Spring Semester 1986

December 31, Tuesday: Last day for mail payments of Spring Semester fees for preregistered students.

January 6, Monday: Last day for preregistered students to pay Spring Semester fees in person without late payment penalty.

January 17, Friday: Foreign students arrive.

January 19, Sunday: Intersession housing ends. Residence halls open for new student check-in at 1 p.m.

January 20-22, Monday-Wednesday: Final registration and payment (or proper deferral) of fees for all students not previously registered (schedule announced prior to registration).

January 20, Monday: Undergraduate student orientation for new transfer students. Residence halls open for returning student check-in (Mon.-Wed.).

January 21, Tuesday: Undergraduate student orientation for new Freshmen.

January 22, Wednesday: Undergraduate student orientation for students not having participated previously.

January 23, Thursday: **Classes begin;** late registration period begins with \$20 late fee assessed.

January 27, Monday: Senior citizen auditor program registration (telephone 246-3305 for information).

February 5, Wednesday: End of late registration period; last day for undergraduate students to add a course or to drop a course without a W (Withdrawal) grade being recorded; last day for all students to drop a course without tuition liability; last day for undergraduates to apply for change of status to or from full-time/part-time.

February 7, Friday: Last day for undergraduates to file for May graduation at the Office of Records/Registrar, and for August candidates to apply if they wish to attend University Commencement in May.

February 19, Wednesday: Last day for graduate students to add or drop a course.

February 21, Friday: Last day for graduate students to file for May graduation; graduate students (except CED) file at Graduate School Office; CED students file at CED Office.

March 6, Thursday: Last day for payment of deferred Spring Semester fees.

March 14, Friday: Last day for removal of Incomplete and NR (No Record) grades from the Fall Semester.

March 21, Friday: Spring recess begins at close of classes. Spring quarter housing period ends. Last day for undergraduates to withdraw from a course without withdrawing from the University; last day to change courses to or from Pass/No Credit.

March 31, Monday: Classes resume.

April 9-18: Prime Time for students (intensive academic advising period).

April 14, Monday: Advance Registration for Fall Semester begins (schedule announced prior to registration). Bills for Fall Semester to be mailed approximately June 1 with payment due during latter part of July.

April 18, Friday: Last day for graduate students to submit theses and dissertations to Graduate School for May graduation.

April 21, Monday: Registration begins for Summer Session with fees payable at time of registration.

April 24-25, Thursday-Friday: Passover Recess (no classes after 4:30 p.m. on April 23).

May 9, Friday: **Last day of classes;** last day to withdraw from the University.

May 12, Monday: Final examinations begin; final grades due in Registrar's Office 48 weekday hours after last class meeting or scheduled examination.

May 16, Friday: Final examinations end; Spring Semester ends. Residence halls close for all except graduating seniors and summer residents.

May 18, Sunday: Commencement; all residence halls close.

May 23, Friday: Last day for departments to submit Completion Statements for May master's and doctoral degree candidates.

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*Teacher Preparation courses offered

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